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A Prototype of a Faculty and Staff Executive Information System

by

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Asymetrix's Multimedia ToolBook software authoring package is technically capable and well suited to handle the large amounts of faculty data that the Resume Book contains. Using graphical user interface (GUI), buttons, and hypernavigation allows easy access to desired information.

The *Naval Postgraduate School Faculty and Staff Resume Book* EIS system is a solid foundation on which to examine the capabilities of multimedia technology. It provides an excellent opportunity for the Naval Postgraduate School to become a leader in this dynamic field..

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I. INTRODUCTION

A. BACKGROUND

The *Naval Postgraduate School Faculty and Staff Resume Book* contains biographical details on faculty and key staff members. It is the consolidated data source of a faculty member's research area, expertise, education, and background. This information is used by the NPS Public Affairs office, deans, faculty, staff, and students.

The Office of the Dean of Research is responsible for maintaining and updating the Resume Book, which contains approximately 150 resumes. Nearly 50 copies of the Resume Book are distributed around campus, including the department and academic group Chairs, Deans, Superintendent, and Curricular Offices, with updates occurring biannually.

The updating process starts by comparing the Resume Book's index with the Naval Postgraduate School's (NPS) on-line telephone directory. Faculty and staff members not listed in the directory are deleted from the ensuing Resume Book. Next, a list of "Prospective Gains" and "Prospective Losses" is constructed. This list is sent to each department's secretary to verify accuracy. Departmental responses are then used to create a new list of additions, deletions, and updates for the subsequent Resume Book.

Modifications to the Resume Book are accomplished by sending a memorandum to a faculty member requesting a resume (for new faculty members), an updated resume (for outdated resumes), and a photograph. For faculty members who do not respond, second and third notices are sent. If there is still no response, the new member is not added, or the outdated resume stays in the book. There are no adverse consequences for noncompliance.

To complete the update process, new and updated resumes, along with a deletion list, are sent to the holders of the Resume Book. The holders are instructed to insert the new resumes into a 3-ring binder notebook, and remove the inactive ones. Approximately 100 resumes are added, deleted, or updated each year.

The present updating process is cumbersome and ineffective. The manual updates required to maintain the Resume Book are time-consuming, inaccurate, and laborious. Major problem areas in the current process include:

- Faculty members often ignore memorandums requesting resume updates.
- Resume Book holders fail to revise their copy of the Resume Book.
- Changes are not made at the lowest level, i.e., individual departments.
- The updating process is often neglected because the perception is that no one uses the Resume Book, due to the lack of accessibility.

In addition to these problems, no systematic and effective query system exists to obtain information about faculty in specific research areas. Currently, there is no means to link faculty interests using the existing Resume Book. A Total Quality Leadership Process Action Team was commissioned to study these problems and recommended implementing an executive information system (EIS) as an alternate solution. The Process Action Team's recommendation was implemented in this thesis by using Asymetrix's Multimedia ToolBook to develop the suggested EIS system.

Multimedia technology is an effective tool to condense large amounts of information into a format that an end user can comprehend and easily use. Sound effects, music, animation, video, graphics, and hypertext combine to provide an information experience that is not attainable with any single medium. Multimedia, by appealing to more than a single sense, gets viewers more interested and increases their retention rate. It can be a strategic asset that plays a vital role in an organization's information technology development and growth. [Ref. 1]

Using the authoring package Multimedia ToolBook to prototype the *Naval Postgraduate School Faculty and Staff Resume Book* has many advantages:

- Faculty and staff photographs can be incorporated into the EIS. This allows for easy identification of faculty members and greatly enhances the EIS system.

- Hypernavigation is used throughout the EIS system. This allows users to obtain additional information with point and click ease. Information is stored in a nonlinear method and can be easily accessed.
- The EIS system can link faculty together who have the same research interests. This query system will improve access to information concerning NPS faculty and their research.
- Electronic updates will be faster, more timely, and more economical than the present manual process. Updates can be accomplished at the department level.

A multimedia EIS system will greatly enhance the usefulness of the *Naval Postgraduate School Faculty and Staff Resume Book*. Multimedia is an effective medium when developing an EIS, presenting an overview of an organization's activities, identifying faculty members, developing interactive instructional material, or for many other applications. A multisensory platform can furnish essential information in a user-friendly format. It provides the means to consolidate vast amounts of information into a usable form that is easy to visualize and comprehend.

B. MILITARY APPLICATIONS

An EIS system such as this could be especially useful to military organizations where personnel turnover rate is high. There is a burdensome demand on senior officers to compile and sort large amounts of personnel data. This is usually accomplished by time-consuming, manual updates or by just relying on memory. The *Naval Postgraduate School Faculty and Staff Resume Book* EIS system could easily be modified to

provide personnel data for a Battle Group Commander (BGC) or Commander of Air Group (CAG).

Typically, these senior officers have hundreds of officers under their command, with no EIS system to maintain personnel files. Using a multimedia EIS would provide a quick reference of key personnel and their qualifications. The EIS system could be used to track strike, division, and section leader qualifications, and other important data. This would greatly aid a BGC or CAG in determining combat readiness, especially on short notice. The EIS system would allow for rapid updates in a wartime scenario, or the typical high personnel turnover rate present in any military organization. Additionally, the information would be permanently stored, instead of relying on a person's memory.

C. ORGANIZATION

Chapter II of this thesis examines an overview of multimedia. Chapter III will discuss the database development methodology and outline the steps used in designing the *Naval Postgraduate School Faculty and Staff Resume Book* EIS system. Chapter IV will examine the proposed prototype for the EIS system. Chapter V will summarize the conclusions and recommendations of the thesis.

II. MULTIMEDIA

Multimedia technology is in its infancy stages. Merely defining the term is a difficult task due to the lack of standardization. Every vendor in the computer industry has their own definition and standard; usually so their merchandise can be loosely categorized as multimedia. A collective definition of multimedia includes the integration of audio, video, text, graphics, animation, and images, in an information system.

To fully discern multimedia, past, present, and future developments need to be examined. This will expand knowledge about this *buzzword*, and lead to more informed decisions concerning multimedia technology.

A. BACKGROUND OF MULTIMEDIA

In the infancy stages of multimedia applications, computers could link graphs with text, but usually at low resolutions. This drawback was quickly overcome when graphical user interface (GUI) came into prominence. In 1984 Apple-Macintosh made GUI a reality and the foundation of its desktop computer. By 1985, "graphics PC" was the new *buzzword*, much as the term multimedia is today. Microsoft Windows was developed soon after for the DOS-computer environment and made GUI common terminology. The added

capabilities of scanners, mice, laser printers, and multiple fonts rapidly increased user demands and led to hyperlinking. [Ref. 2]

Hyperlinking is a technology that many multimedia applications employ today. Information is stored in a nonlinear method. For example, a user can simply click a "hot" word or phrase to obtain more information on a subject. Cross-referencing is also available, because of the nonlinear navigation capabilities. "Once we could easily navigate information and had access to more powerful hardware, we began to want more sophisticated applications that combine analog and digital video, computer graphics, and sound [Ref. 3]." This demand for refined applications has put multimedia in the limelight and explains why most vendors want to jump on the "multimedia bandwagon."

B. MULTIMEDIA APPLICATIONS

Schools, businesses, government, and individuals are all using multimedia technology. Multimedia has applications for education tools, training programs, business presentations, and more.

The skill level of multimedia users is diverse. Skill levels range from designing computer professionals to customers viewing product demonstrations. This variety of end users is causing the user interface issue to realize greater significance. "The computer industry is searching for

breakthroughs in natural interfaces to make using the computer as natural as speaking to a friend [Ref. 4]." This emphasis on friendly user interface is ensuring more people get access to and freely use multimedia presentations.

Lack of industry standards has resulted in many problems in the early stages of multimedia. The integration of various components caused numerous difficulties for the end user. To combat this obstacle, multimedia personal computer (MPC) specifications were devised. To ensure hardware and software compatibility, MPC minimum standards were established: [Ref. 5]

- 80386SX or higher CPU processor with clock speed of at least 16 MHz
- 2 MB of RAM
- 30 MB hard disk
- 3.5 inch, 1.44 MB floppy drive
- Color monitor (recommended)
- 101-key keyboard
- A two-button mouse
- Serial and parallel ports
- MIDI I/O port
- Joystick port
- Audio board with 8-bit DAC, 8-bit ADC, music synthesizer, on board analog audio mixing capabilities
- CD-ROM with CD-DA outputs, sustained 150k/sec transfer rate without consuming more than 40% CPU bandwidth, average seek time of < one second

- Software compatible with the Applications Programming Interface (API) of Microsoft Windows 3.0 with Multimedia Extensions 1.0 or later

The system described above is the minimum and may not be capable enough for many multimedia applications or development tools. For example, Asymetrix's Multimedia ToolBook recommends four MB of RAM, and a monitor and graphics card for VGA or Video7 VRAM VGA [Ref. 6]. Different manufacturers recommend different configurations, but the MPC standards were designed to be sufficient for an average classroom type of multimedia training.

Multimedia information technology has maintained a steady, incremental progression. With each new technological advance, the importance of multimedia is increasing. As more people use multimedia, its acceptance will grow, thus ensuring its role in the future of information systems.

C. FUTURE MULTIMEDIA APPLICATIONS

The future of multimedia is limited only by imagination and expense. Many features are available today, although cost is preventing it from becoming a common medium. However, if hardware prices continue to drop, and compatibility issues are resolved, then multimedia will be accessible and affordable soon. "Someday, computer users will find that high-resolution graphics, video, animation, and sound capabilities are part of

all machines and applications . . . multimedia capabilities will just be part of the standard platform." [Ref. 7]

More and more businesses rely on sophisticated computer systems to stay competitive. Information systems are strategic assets that influence all aspects of a business--earnings, market share, development, etc. Companies that fail to recognize the impact that multimedia and hypertext is going to have, will lose their competitive advantage. Multimedia is continuing to evolve. Eventually multimedia will not be just a *buzzword* used carelessly by the computer industry to enhance product desirability. Instead, it will be a reality where everyone uses it naturally.

D. MILITARY APPLICATIONS

Multimedia is particularly pertinent to military applications. It has the potential of greatly easing the processing of information, increasing retention rates, and making war game simulation more realistic. Following are a few examples where multimedia can and is being used by the military:

1. War Gaming

Presently, the U.S. Army is employing multimedia to simulate battlefield conditions. One project that uses multimedia technology is the Single Exercise Analysis System (SEAS) for the Army TRADOC command. SEAS is used to aid an analyst in building an exercise scenario for a battle

simulator. The multimedia application prototype will reduce the time required to generate a scenario, by using a single, integrated, digital workstation to do battlefield generation and analysis. The quality of battlefield exercises should also improve. [Ref. 8]

2. Videoconferencing

Videophones and desktop computer videoconferencing systems accommodate the use of gestures and expressions, which is a significant part of human communications. Eventually every command center should have at least one videophone console to improve the communication process. Senior officers, who are in direct contact with central headquarters or other government agencies, will benefit greatly from this technology. Getting sensory information through sight and sound will increase comprehension and reduce miscommunications.

3. Training

Multimedia will improve the productivity of military personnel by increasing learning retention rates. A major area of multimedia application is in education and training. Multimedia interactive training modules are rapidly becoming a primary source of learning, due to their ability to increase learning retention rates. "Audiences retain 20 percent of the information they hear, 40 percent of the information they see, and 60 to 70 percent of the information they learn through

interaction [Ref. 2]." The use of interactive multimedia training can save the military valuable time and money by reducing training time and costs.

4. Graphical User Interface (GUI)

GUI allows users with different computer skill levels access to data. Typically, senior officers do not have much experience with computers. Using a multimedia application that emphasizes GUI improves accessibility to data for less skilled operators. This mixed domain of end users is causing the user interface element to become a central issue. "Computer applications in the future will continue to spend more and more of their processing time on user interface issues and less on actual data processing [Ref. 3]." Providing an uncomplicated means for senior officers to access critical information is an important benefit of a multimedia application that stresses GUI.

5. Image Databases

Image databases can replace hard copy photographic or videotape files. This technology is rapidly coming on line and will be the standard in a few years. Using image databases will lead the military toward the goal of becoming a "paperless organization." Aviation maintenance squadrons already have access to entire sets of manuals on CD-ROM. Similar CD-ROM catalogs for GSA products can be expected soon, along with an interactive ordering system.

6. Future of Multimedia and the Military

Multimedia and hypernavigation are here to stay. Combining hypertext with multimedia provides a powerful information system that even computer novices can use. Due to the rapid evolution of today's computer systems, the military needs to start upgrading their architecture now to fully utilize multimedia and hypertext capabilities. System planners need to ensure that military computing architecture can fully support multimedia demands. If the military aggressively embraces multimedia today, they will continue to have the technological advantage tomorrow.

III. EIS DEVELOPMENT

System requirements arise from a user's need to track data. A model is developed to represent these requirements. This model is transformed into a logical design. The logical design is then implemented into a physical media using a specific software package. Although there are many different processes in developing an EIS system, there are five fundamental phases which should be addressed. [Ref. 9]

The five development phases involved in the production of the *Naval Postgraduate School Faculty and Staff Resume Book* EIS system will be discussed in this chapter. Throughout the development process, the following objectives were emphasized: [Ref. 10]

- Provide extremely user-friendly interface for the executive
- Meet individual executive's decision styles
- Provide timely and effective tracking and control
- Provide quick access to detailed information
- Filter, compress, and track critical data

These objectives keep the focus on the most important issue when producing any software application. End user needs **must** be the overriding consideration throughout system development. This cannot be overemphasized. If an EIS system

does not satisfy the targeted end user, then the objectives will not be achieved.

The *Naval Postgraduate School Faculty and Staff Resume Book* EIS system fulfills these objectives. It was designed to provide the Dean of Research a quick, uncomplicated method to locate a faculty member's resume, publications, and awards. Additionally, a query system was developed to link faculty members by research interest, departmental affiliation, and administrative positions.

A. DEFINITION PHASE

The purpose of the definition phase is to figure out what is to be done, the scope of the project, and the feasibility in completing it. Time is allotted for getting organized, narrowing the focus of the problem, and ascertaining whether the undertaking can be achieved. [Ref. 9]

A process action team (PAT) recommended developing an EIS system that would increase accessibility, improve the updating process, and be easy to maintain. Producing an EIS system that fulfills these requirements was the objective of this thesis. To meet the Dean of Research needs, the *Naval Postgraduate School Faculty and Staff Resume Book* EIS system required a query system. This query system had to sort faculty by name, department, research, or title.

The feasibility of the project was decided to be reasonable given a nine month time constraint. However, it

was concluded that a two-week software training course at Asymetrix corporation was required to acquire the necessary technical skill. This author traveled to Bellevue, WA to receive this invaluable training.

B. REQUIREMENTS PHASE

The requirement phase is used to figure out what the EIS system needs to do. The most effective means of determining requirements is to ask the end users. "The ultimate authority on application requirements is the user [Ref. 10]."

Typically, end users do not know exactly what they require from an EIS system. Therefore, before meeting with the Dean of Research, a model was developed that included overall design, screen display, menus, and printouts. These were presented to the Associate Dean of Research for feedback. Minor modifications were suggested, including a two-step password design. These recommendations were incorporated into the EIS system. Interviews are critical in discovering end user requirements.

To represent the various entities, an object-oriented model was employed. An object is "a named collection of properties that sufficiently describes a distinct identity [Ref. 9]." Each object has a set of characteristics or properties that define it. These objects are shown in Figure 1.

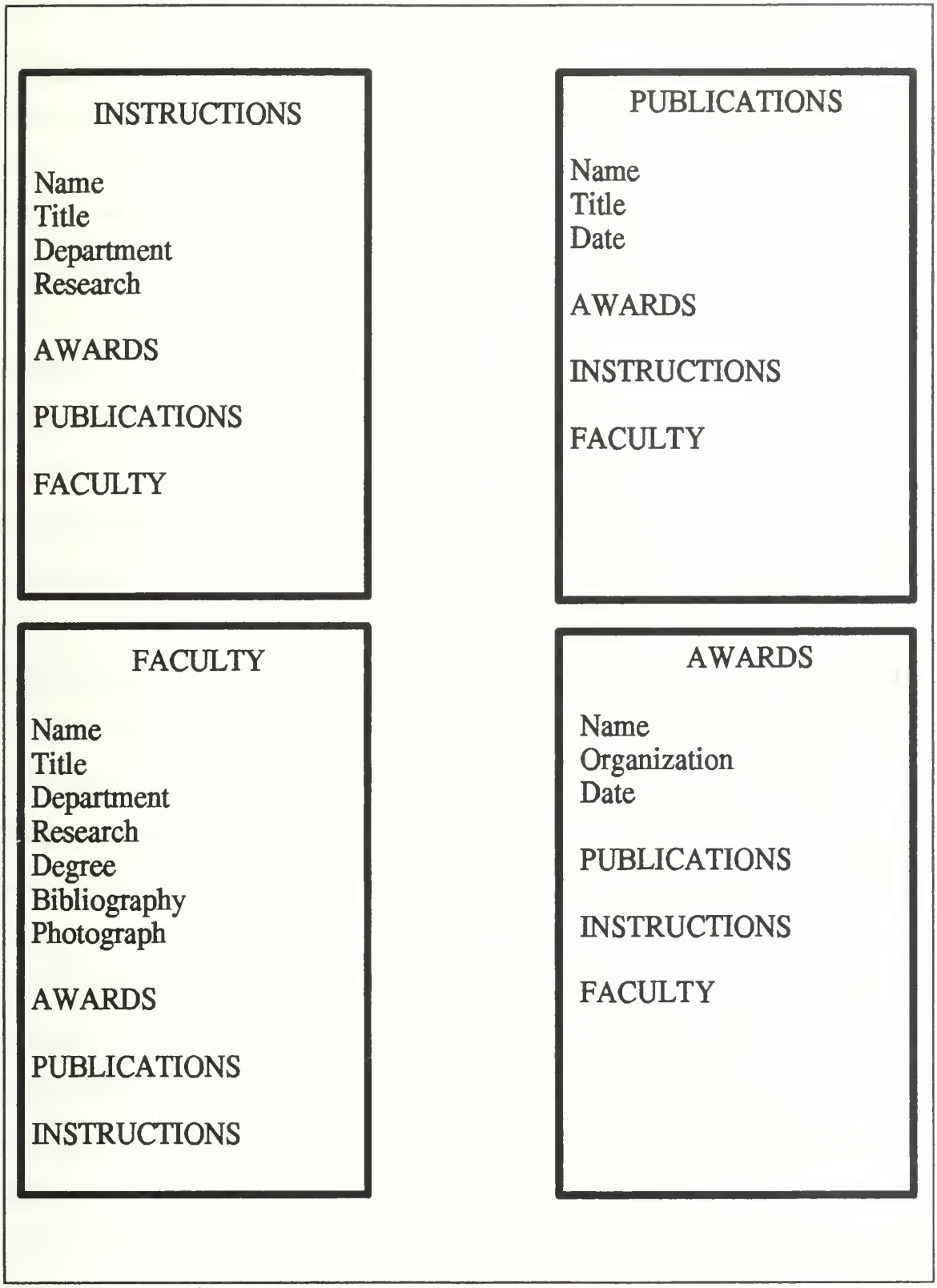

Figure 1 Object Model

Interrelationships between objects must be carefully inspected to ensure that update, display, and control mechanisms do not build anomalies into a system. Anomalies occur when a relationship exists between objects, and modification of data affects the system in an unwanted fashion. Two types of modification anomalies are insertion and deletion.

To ensure that the *Naval Postgraduate School Faculty and Staff Resume Book* EIS system was free from insertion and deletion anomalies, all relations were broken down to a single link. This was possible because of the hyperlinking capabilities of Multimedia ToolBook. For example, when a new person is added, there is an automatic link created to the appropriate PUBLICATIONS and AWARDS page. This uninterrupted linking ensures that when a FACULTY object is deleted, the corresponding PUBLICATIONS and AWARDS objects are also deleted. Hyperlinking eliminated modification anomalies. By limiting relationships to a singular link, relations between objects were "normalized."

Multimedia ToolBook assigns a "UniqueName" to each page created. Navigation is established by creating a link to the correlating pages. This provides a direct relationship between each instance of an object and links pages together in the correct navigation scheme. This is how the hyperlinking mechanism operates.

C. EVALUATION PHASE

During evaluation phase, the application system architecture is chosen, user requirements are reexamined, and feasibility is reassessed. The evaluation phase allows the end user and system designer to meet again to ensure user specifications are satisfied. Detecting design flaws or revising requirements needs to be identified in the early stages. Significant savings in time and money will be realized if corrections are made before the implementation phase.

The software chosen was the authoring package Multimedia ToolBook, made by Asymetrix corporation. It was found technically capable and had the GUI capabilities to satisfy user requirements. The system architecture that Multimedia ToolBook had to support was determined to be a stand alone personal computer (PC), with the possibility of putting it on a local area network (LAN). The objective of this thesis is to build an EIS system on a PC that uses GUI to the maximum extent possible, and is easy to use, maintain, and update.

User requirements were refined through interviews with the Dean of Research staff, and Professors Liao and Thomas, co-advisors of this thesis. It was determined that the EIS system needed to sort faculty personnel by name, department, research area, or title. This provides the Dean of Research a quick and easy reference list that can be utilized when research projects need to be assigned. Satisfying the end

user was the primary focus of this EIS system. A thorough examination of user needs was completed before advancing to the next phase.

A complete review of the evaluation phase reduces user dissatisfaction and reduces the number of changes that must be made after the system is built. The outcome of the evaluation phase resulted in a set of finalized user requirements that would be technically feasible using Multimedia ToolBook. The data model was refined to reflect these changes. With this improved set of definitive requirements, the evaluation phase was completed.

D. DESIGN PHASE

In the design phase the logical model is translated into specific data structures and relationships. The object-oriented model was revised to show these data structures, Figure 2. Each property of an object is an attribute to the relation.

The object INSTRUCTIONS has four attributes that allow the user different ways to view the EIS system. A user can opt to view by name, department, research, or title. The "fork" at the end of relationship line between the objects INSTRUCTIONS and FACULTY means that there can be many instances of FACULTY accessed by the object INSTRUCTION. The circle at the FACULTY end shows that the relationship from INSTRUCTIONS to FACULTY is optional. There does not have to be any instances of

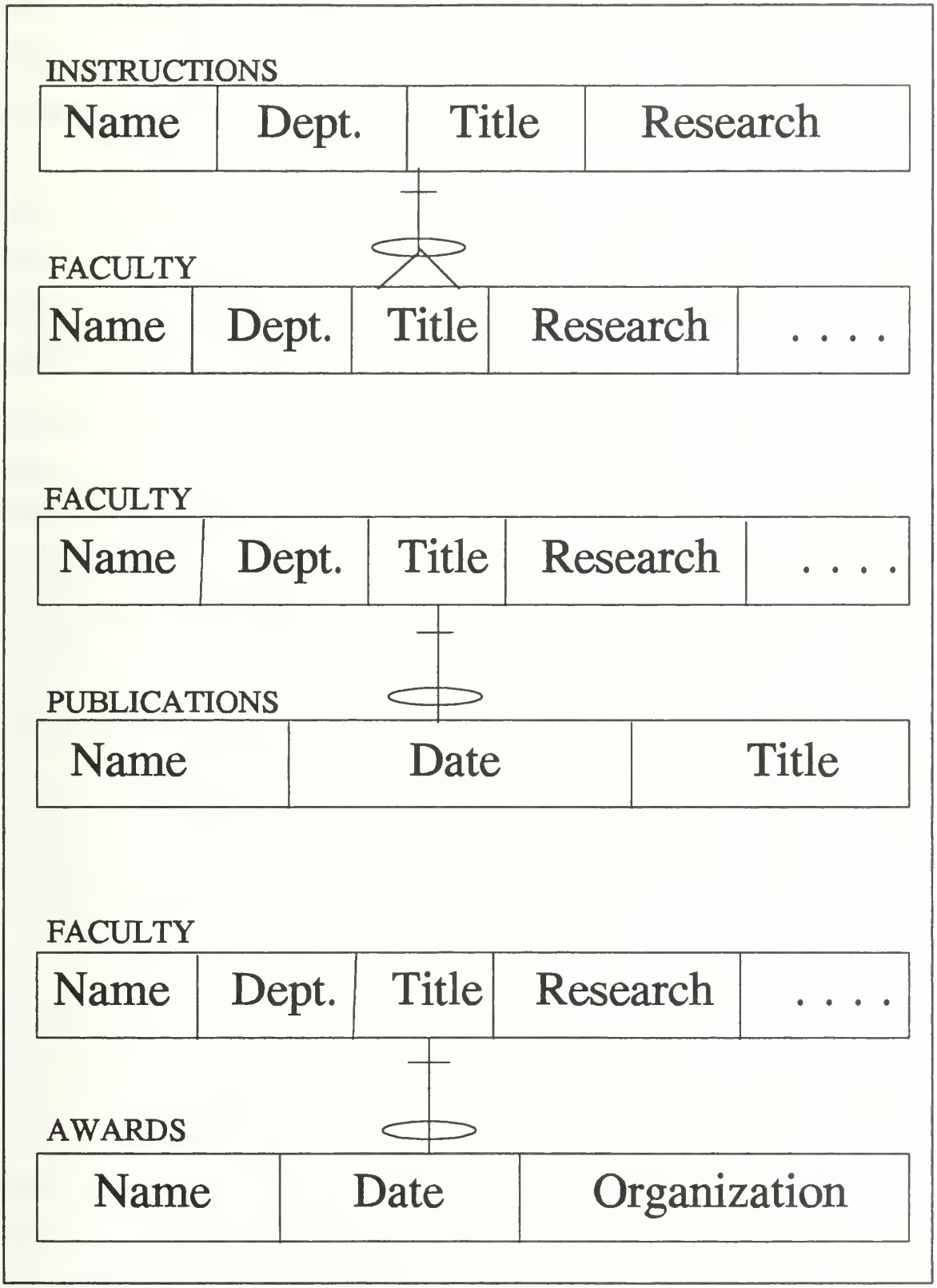

Figure 2 Object Data Structures

FACULTY for the object INSTRUCTIONS to exist. However, the bar at the other end of the line indicates that the object INSTRUCTIONS must be present for any instances of FACULTY to exist.

The relationship between FACULTY, PUBLICATIONS and FACULTY, AWARDS is identical. Therefore, only the relationship between the objects FACULTY and PUBLICATIONS will be described. Absence of a "fork" in the relations line between FACULTY and PUBLICATIONS symbolizes that there exists a one-to-one relationship between the objects. For each instance of FACULTY there exists a unique PUBLICATIONS instance. Therefore, there is a direct link between the two objects and a specific instance of PUBLICATIONS exists for a particular FACULTY.

The circle at the PUBLICATIONS end of the relationship line signifies that an instance of FACULTY does not have to contain any instances of the object PUBLICATIONS. However, the horizontal bar at the FACULTY end shows that if there is an instance of PUBLICATIONS, then there must be a corresponding instance of FACULTY.

Before the end of the design phase, all models and relations were given a thorough review. This is the last chance to make corrections before the implementation phase. Correcting errors during the design phase is much easier than changing the EIS system after it is built. During the implementation phase errors are costly and difficult to

repair. It is imperative to provide a comprehensive inspection before proceeding. Time and money will be saved if the design phase is properly completed and reviewed.

E. IMPLEMENTATION

The final phase in the *Naval Postgraduate School Faculty and Staff Resume Book* EIS system is implementation. This phase is broken into three parts:

1. Programming

The actual system coding was done in the program language, OpenScript. OpenScript was developed by Asymetrix corporation to be used with Multimedia ToolBook. The *Naval Postgraduate School Faculty and Staff Resume Book* coding scripts are included in Appendix B to allow for future maintenance or modification to the EIS system.

OpenScript is an object-oriented language. Each object has properties, including user-defined properties. Being able to change properties is what makes OpenScript such a powerful language. Every object property can be manipulated through coding. OpenScript coding controls the hyperlinking, animation, object editing, and object movement for the entire EIS system.

This author went to a two-week OpenScript training course at the Asymetrix Corporation in Bellevue, WA. The course increased OpenScript proficiency and revealed the flexibility and strengths of Multimedia ToolBook. After

completion of this training, the author finished the coding in about one month. Without the training, many user requirements would have been beyond the skill level of the author. OpenScript training was invaluable in completing this project.

2. Testing

Each area of the EIS system was thoroughly tested using a black box testing approach. Black box testing is a method where inputs are entered into the EIS system and the resulting outputs are checked to see if overall results are as expected. Black box testing does not concern itself with the internal functions of the system. Instead, it checks the system as a whole to ensure the results are valid.

Over 100 test records were entered to check the system. Minor anomalies were detected and corrected. For example, when a faculty member's name was changed, the access list was not automatically updated. A sorting function was added to automatically update this list.

Testing is an important part of any software program. However, not every possible key stroke combination that a user might enter can be tested. All the various permutations would take years to test. The conclusive test will be affected by the end users. They will decide if there are any errors in the program, and if it meets their needs. This is the true litmus test of any software application.

3. Installation

The last stage of the implementation phase is installation. There are two primary methods to install a new system. One is to completely abandon the old system and just use the new one. The second method is to run parallel systems until the new system is fully integrated into the organization.

There is no other EIS system for the *Naval Postgraduate School Faculty and Staff Resume Book*, although there is still the paper version. Maintaining the current Resume Book should be continued until the final decision is made to convert to the EIS system. This will ensure the old *Naval Postgraduate School Faculty and Staff Resume Book* is still in place in case of any unexpected problems.

This EIS system can be put on a LAN to increase accessibility. The problem of throughput delay that often occurs in a packet switching network will not affect this EIS system, because there is no digitized audio or video. It contains only text and graphics and will be able to be fully functional on a LAN with no anticipated problems.

The executable file required to run the EIS system on a network is already included in the prototype submitted to the Dean of Research. The only other requirement is to put the Resume Book files on a network server. This will increase accessibility and satisfy user requirements. Additionally, a

network EIS system will provide a "paperless" alternative to the current process.

IV. FACULTY AND STAFF RESUME BOOK PROTOTYPE

This chapter will be broken into two major parts. First, a general overview of the authoring package Multimedia ToolBook will be presented. To thoroughly comprehend the *Naval Postgraduate School Faculty and Staff Resume Book* EIS system, an explanation of how Multimedia ToolBook operates is necessary. This will make the overall design of the EIS system much clearer. Second, a specific description of the EIS system using Multimedia ToolBook will be outlined.

A. MULTIMEDIA TOOLBOOK

Multimedia ToolBook is an object-oriented authoring tool that has hypernavigation capabilities and a powerful programming language called OpenScript. It can be used to manage information, educate, and train. ToolBook is a software package used to construct **applications**. Applications are computer programs designed to perform special tasks, i.e., the *Naval Postgraduate School Faculty and Staff Resume Book* EIS system.

1. Books and Pages

Two basic terms used with Multimedia ToolBook are **pages** and **books**. An application book can be thought of in the conventional sense, except it has hyperlinking capabilities. Therefore, a user is not limited to just going to the next

screen or **page**. Instead, hyperlinking allows the user to navigate to the most appropriate page in a nonlinear fashion. Hyperlinking increases the flexibility and effectiveness of an application.

A book is comprised of separate screens or **pages**. A book is built by creating these individual pages and then linking them together through the use of OpenScript programming. OpenScript permits the books to perform in the desired manner. Two key concepts to understanding Multimedia ToolBook are that **objects** are created and **event-driven**. This will be examined closer in the following sections.

2. Objects

Multimedia ToolBook is object-oriented. All books, backgrounds, pages, fields, buttons, and graphics are objects that can be manipulated to achieve their designed purpose. Objects have pre-defined, built-in behaviors. This greatly simplifies the development process, because only behavior that is unique to a particular object needs to be programmed.

For example, in a typical programming language, such as ADA or C, to draw, move, and resize a button object requires many lines of code. With Multimedia ToolBook, the button object and its properties are already pre-defined. Therefore, to create, size, and move a button object just requires a few clicks of the mouse. This feature greatly

reduces development time and improves the flexibility with which an application can be constructed.

Asymetrix corporation developed their own programming language called OpenScript to be used with Multimedia ToolBook. Objects can be programmed to work and act in different ways. Each object can be manipulated with OpenScript coding, called **scripts**. Every script is associated with an object. To induce objects to perform their desired function, a script is executed. A script is a group of OpenScript procedures which are divided into parts called **handlers**. Handlers describe what will happen in response to user inputs.

The other method of altering an object's behavior or appearance is by setting an object's **properties**. A property is an attribute of an object that can be modified. It is similar to a variable in a traditional programming language, however, it is permanent and is stored with the object. Therefore, properties persist, and are attached to the object, unlike variables, which perish when the program is finished executing.

Multimedia ToolBook also has **user-defined properties**. This allows attributes of an object to be permanently changed by a user. For example, in the *Naval Postgraduate School Faculty and Staff Resume Book* EIS system there is a button which allows a *Super User* to change the passwords. This is done by creating a user-defined property and associating it

with the object *VIEW*. This allows a password to be permanently changed even when the book is closed and then reopened. User-defined properties greatly enhance the adaptability and potential of an application.

A special type of object is a **Recordfield**. A Recordfield appears in the same position and has the same properties on every page that shares the background, except that it can hold different text on every page. This is what allows Multimedia ToolBook to function like a database. Each Recordfield is analogous to a data field, and each page is similar to a single record.

A Recordfield is always created on the **background**. A background can be thought of as a template that is shared by any number of pages in a book. Objects created on the background appear on every page that share this background. Creating objects on the background can significantly reduce the file size of an application. Objects created on the **foreground** are unique to that page. Foreground objects only appear on individual pages.

3. **Event-driven**

Multimedia ToolBook is an **event-driven** system. An event is any action the user performs on a page. Clicking a mouse button, choosing a menu item, or pressing a key are all examples of an event. These events trigger a **message**.

Multimedia ToolBook responds to these messages, based on the OpenScript programming. This response is called a **handler** and can be compared to a subroutine in a procedural language. When a message is triggered, Multimedia ToolBook searches for a handler to respond to the message. Multimedia ToolBook looks for the handler in a predictable order or **hierarchy**. The message is responded to at the lowest level in the hierarchy, Figure 3. When a handler is found, the OpenScript commands are executed, and the message travels no further. Therefore, it is an important design consideration to place the handler at the proper level in the hierarchy.

B. EIS PROTOTYPE

This section will deal with applying Multimedia ToolBook to the *Naval Postgraduate School Faculty and Staff Resume Book* EIS system. A User's Manual is included in Appendix A to provide greater detail in navigating the Resume Book.

To preserve the integrity of the data, the EIS system was divided into four books. Each book contains different data. The four books are INSTRUCT, RESUME, PUBS, and AWARDS. Throughout all four books, a special graphic feature is used to give the appearance that the application is actually turning a page, by "wiping" in the next screen. This gives the illusion that the user is flipping pages as in a real book. Button placement, size, and color were arranged to be as consistent as possible to improve standardization for the

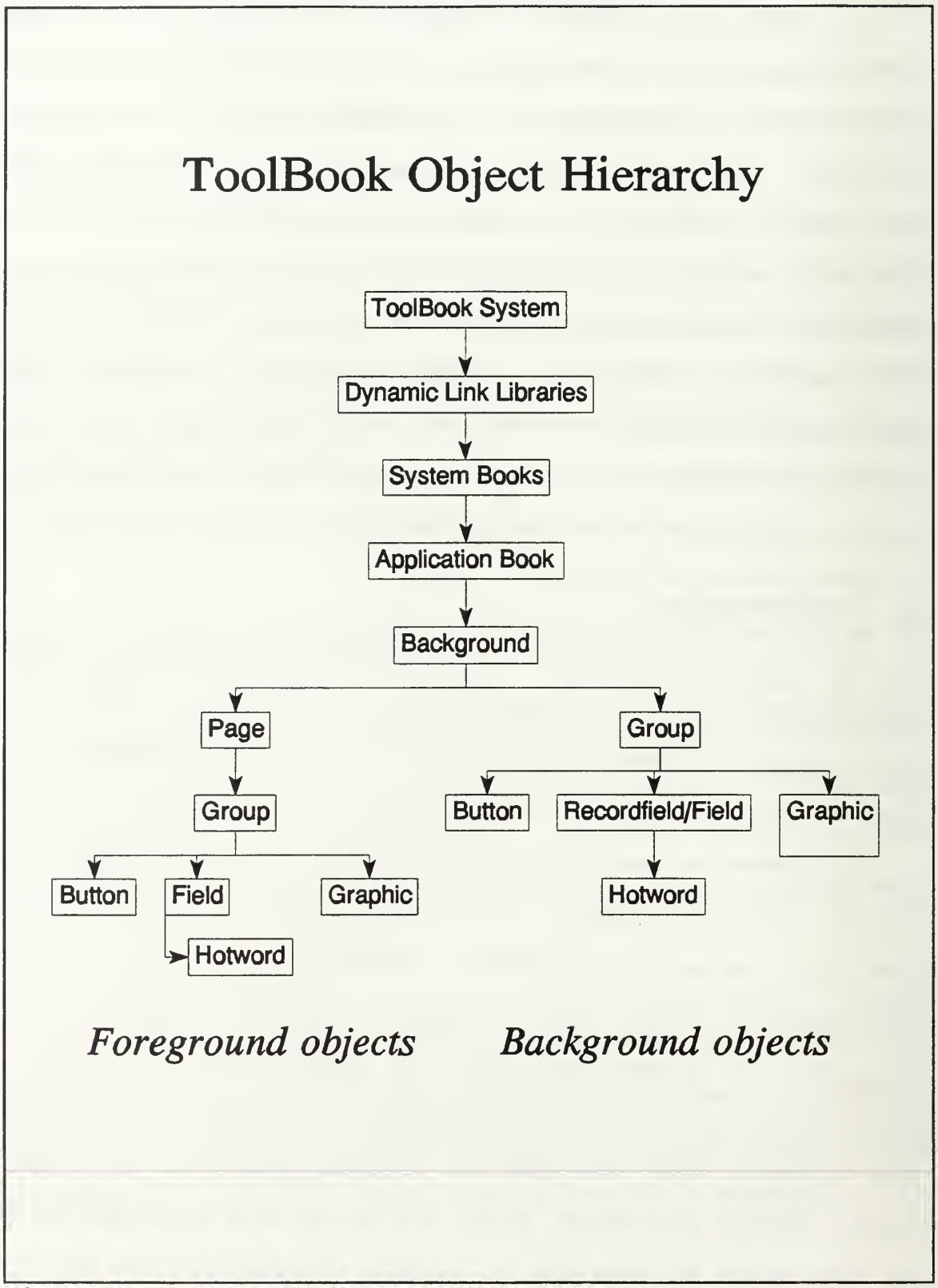

Figure 3 Multimedia Toolbook Hierarchy

user. Each book's layout and design is discussed below.

1. INSTRUCT Book

The INSTRUCT book is the first book that should be opened. It contains all the instructions and procedures on how to navigate through the EIS system.

After an automatic page advance from the first page, the user is at the *Resume Book Instructions* page. This page contains the instructions needed to navigate through the EIS system and describes the purpose of the Resume Book, as shown in Figure 4. The INSTRUCTIONS page contains two fields, OVERVIEW and INSTRUCTIONS.

The OVERVIEW field is used to explain the objectives of the Resume Book and the data it contains. The INSTRUCTIONS field provides information that a first time user might require to employ all the features of the EIS system. Both fields have scroll bars to reveal text which is hidden. All objects on this page were created on the foreground. When the user clicks the NEXT button he/she goes to the *Viewing Options* page, and the caption of the book automatically changes to "Viewing Options," as shown in Figure 5. Automatic caption change is used throughout, so that the user will know which page he is on in the application book.

The *Viewing Options* page has a "hidden" dialog box that appears when the mouse arrow enters the VIEW or MODIFY button. Hiding objects allows a page to contain additional

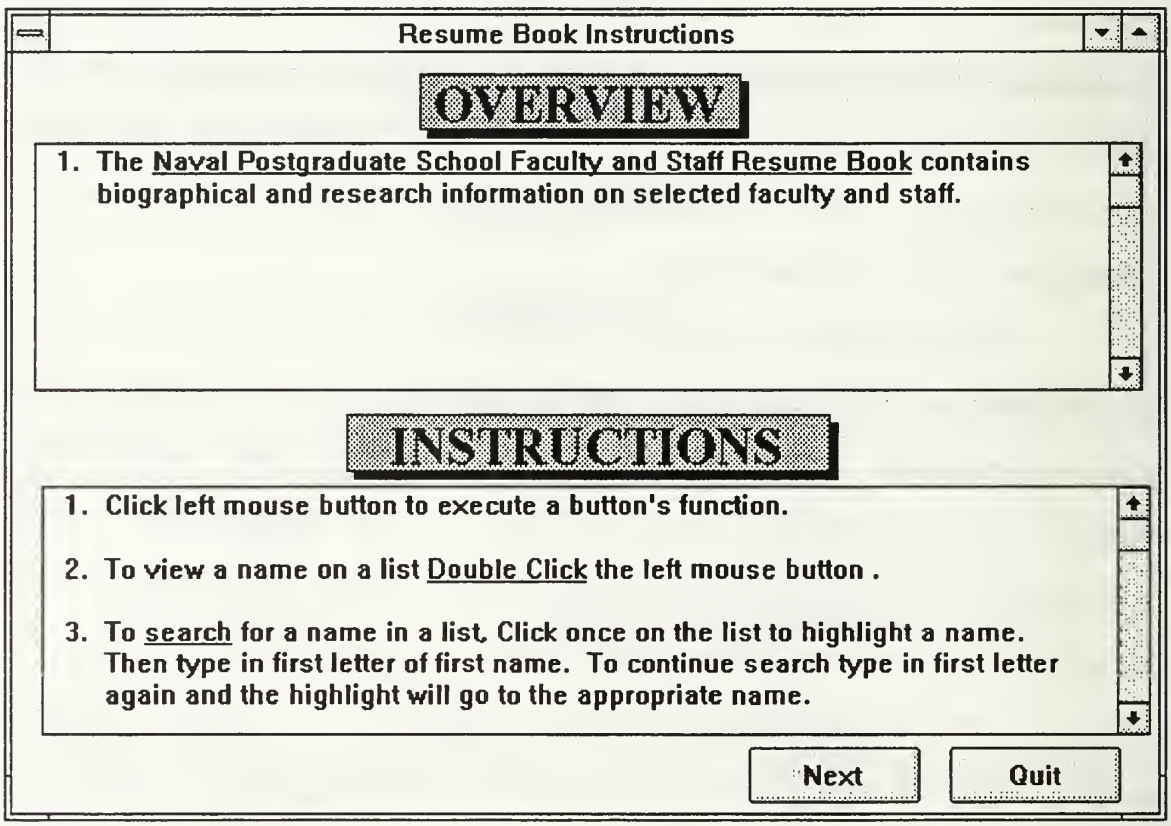
Resume Book Instructions
OVERVIEW
1. The Naval Postgraduate School Faculty and Staff Resume Book contains biographical and research information on selected faculty and staff.
INSTRUCTIONS
1. Click left mouse button to execute a button's function.
2. To view a name on a list Double Click the left mouse button .
3. To search for a name in a list, Click once on the list to highlight a name. Then type in first letter of first name. To continue search type in first letter again and the highlight will go to the appropriate name.
Next
Quit

Figure 4 *Resume Book Instructions* Page

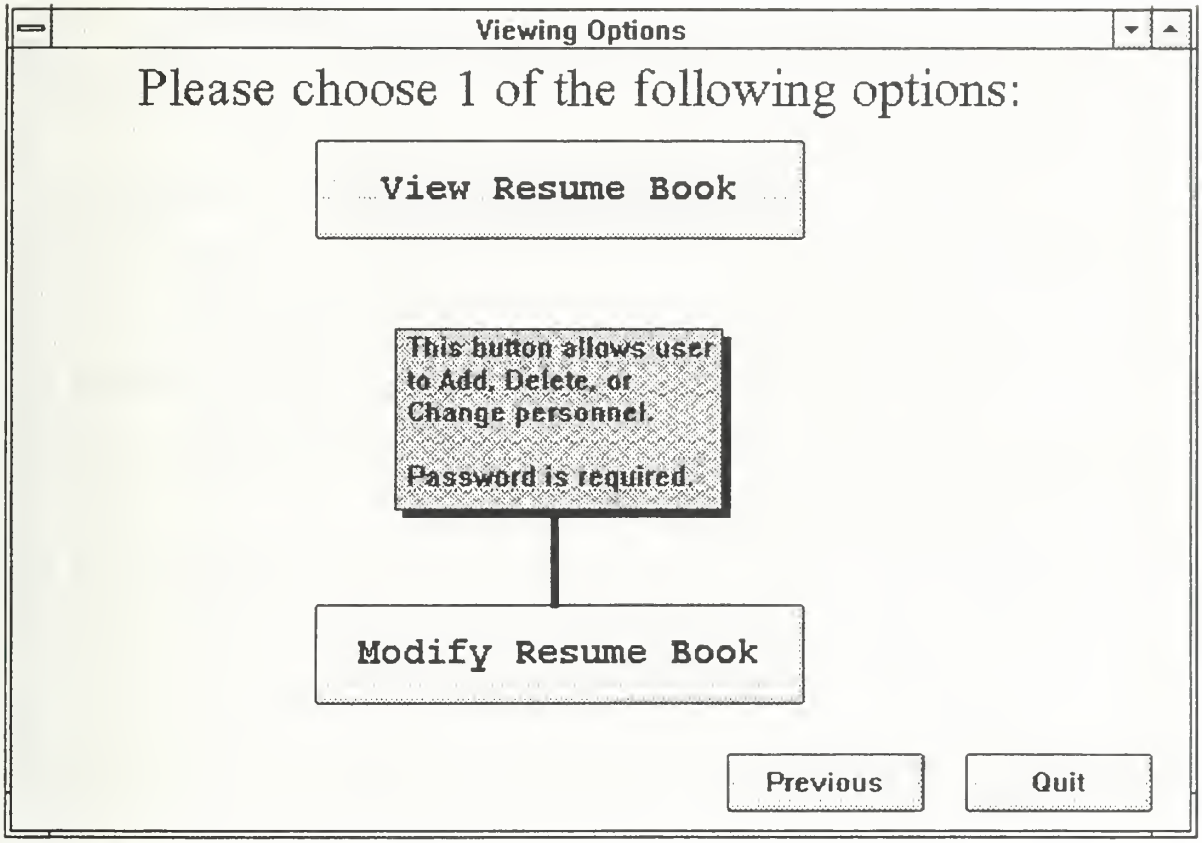

Figure 5 *Viewing Options* Page

information, without overcrowding the computer screen. Hiding and showing objects is done by changing the object property *visible* to true or false. When the *visible* property is true, the object can be seen. When it is false, the object is hidden. This property is used extensively throughout the Resume Book to avoid overcrowding the screen presentation.

When the VIEW button is selected, the user will go to the *Logo* page, and then automatically advance to the *View* page. Clicking the MODIFY button will cause a dialog box to appear, requesting the user enter the correct password. All messages are suspended until the user responds to the dialog box. If the correct password in not entered, the user will be denied access to the *Modify* page. This password system is designed to prevent unauthorized personnel from making modifications to the database.

When the user clicks the VIEW button he advances to the *View* page, as shown in Figure 6. A faculty member's data can be examined by DEPARTMENT or RESEARCH. Clicking either of these buttons will display a hidden **listbox**.

A listbox contains text on each line. Text is a property of a listbox object, and can be used to trigger messages and execute scripts. For example, when the text "ALL" is selected in the DEPARTMENT listbox, the PERSONNEL listbox will appear with an index of all the faculty names. Each line of text in a listbox can send a message, which will execute a script.

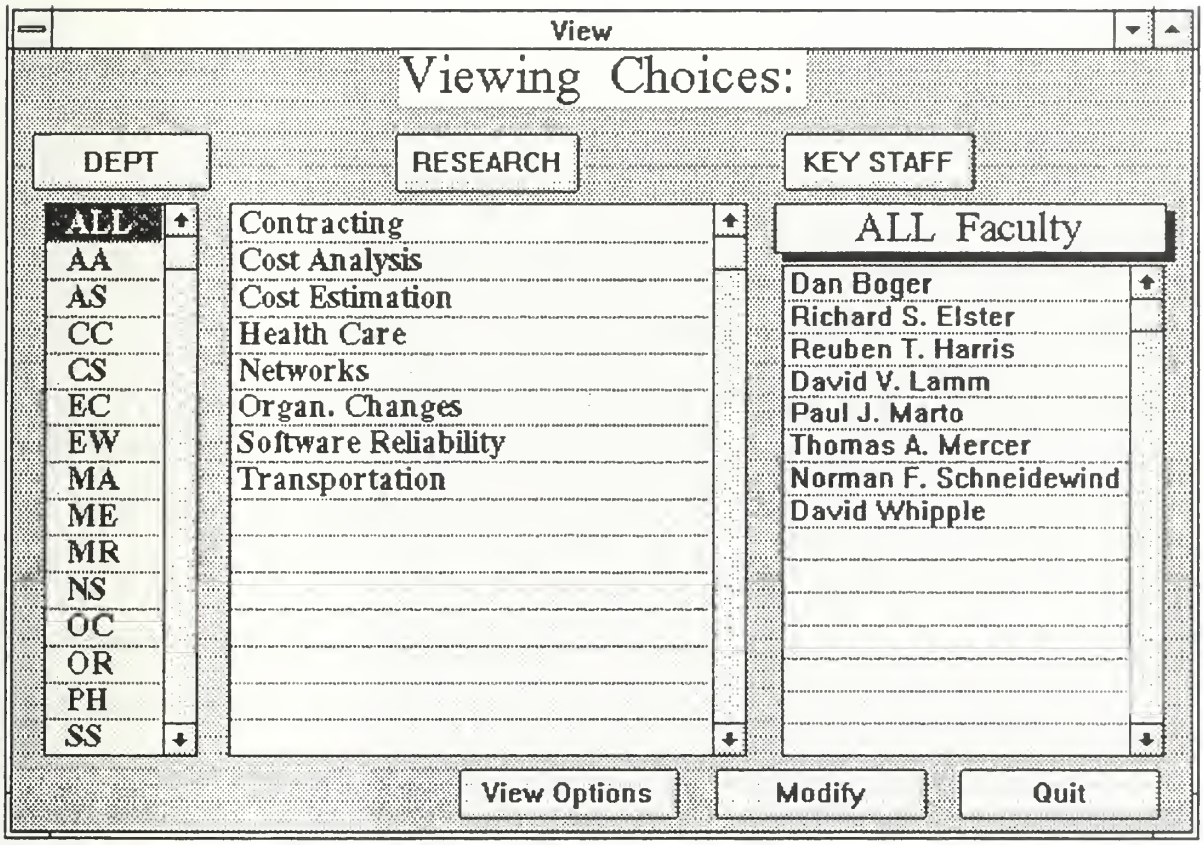

Figure 6 *View Page*

Clicking the KEYSTAFF button will advance the user to the *Keystaff* page, as shown in Figure 7. This page is very similar to the *View* page. Clicking the DEANS, CHAIRS, or MILITARY button will cause the KEYSTAFF listbox object to appear along with a listing of the appropriate personnel. All objects on the *Keystaff* and *View* pages were created on the foreground.

The last page in the INSTRUCT book is the *Modify* page, as shown in Figure 8. This page can only be accessed by entering the proper password when the MODIFY button is depressed. After gaining access to the *Modify* page the appropriate department password must be entered. This will cause the MODIFY listbox and buttons to be shown.

This password design was a direct result of meeting with the end users. The Associate Dean of Research wanted to ensure that individual departments would be able to only modify their own personnel. Providing each department a unique password increases the security of the EIS system and provides an audit trail to track unauthorized entry.

The primary consideration in designing the INSTRUCT book was to keep it as uncomplicated as possible. Users need to be able to navigate through the system without getting lost. GUI was used to increase comprehension and ease of use. The INSTRUCT book is the starting point for the EIS system and will navigate the user through the RESUME book.

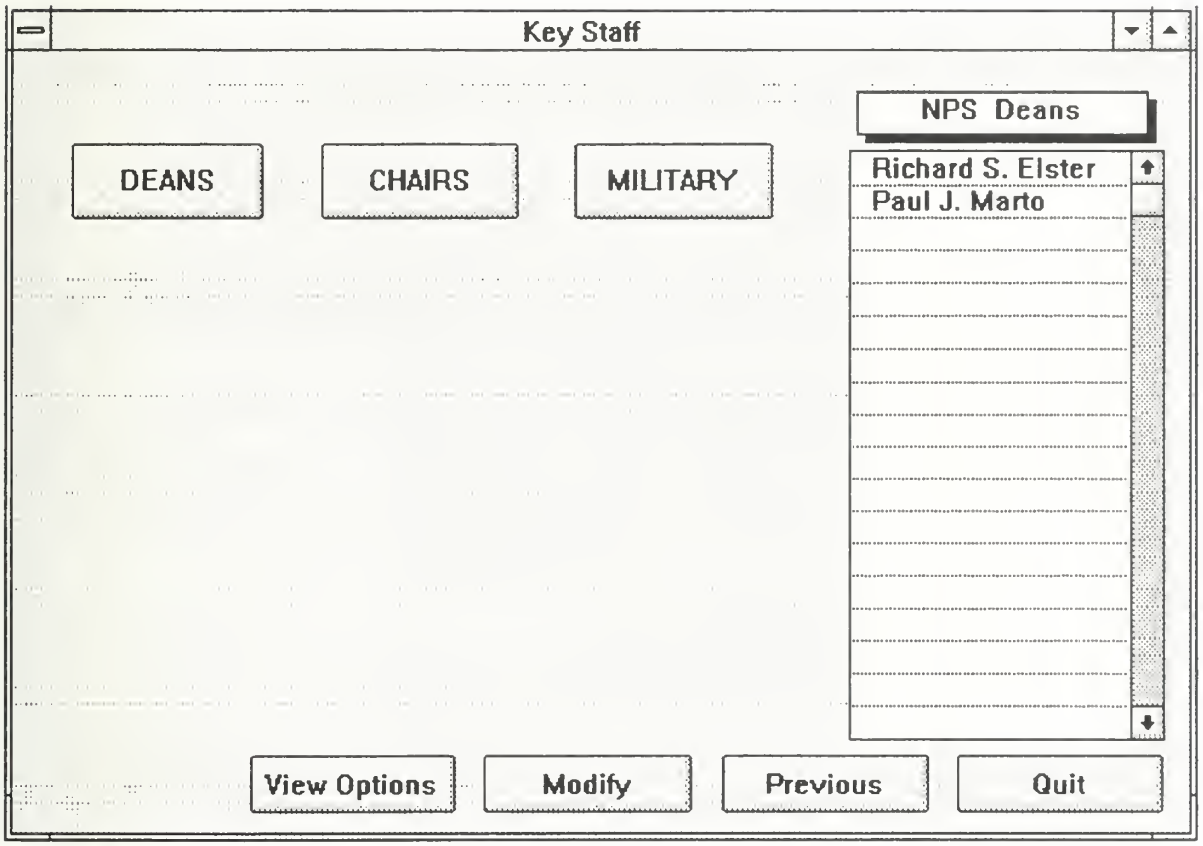

Figure 7 *Key Staff* Page

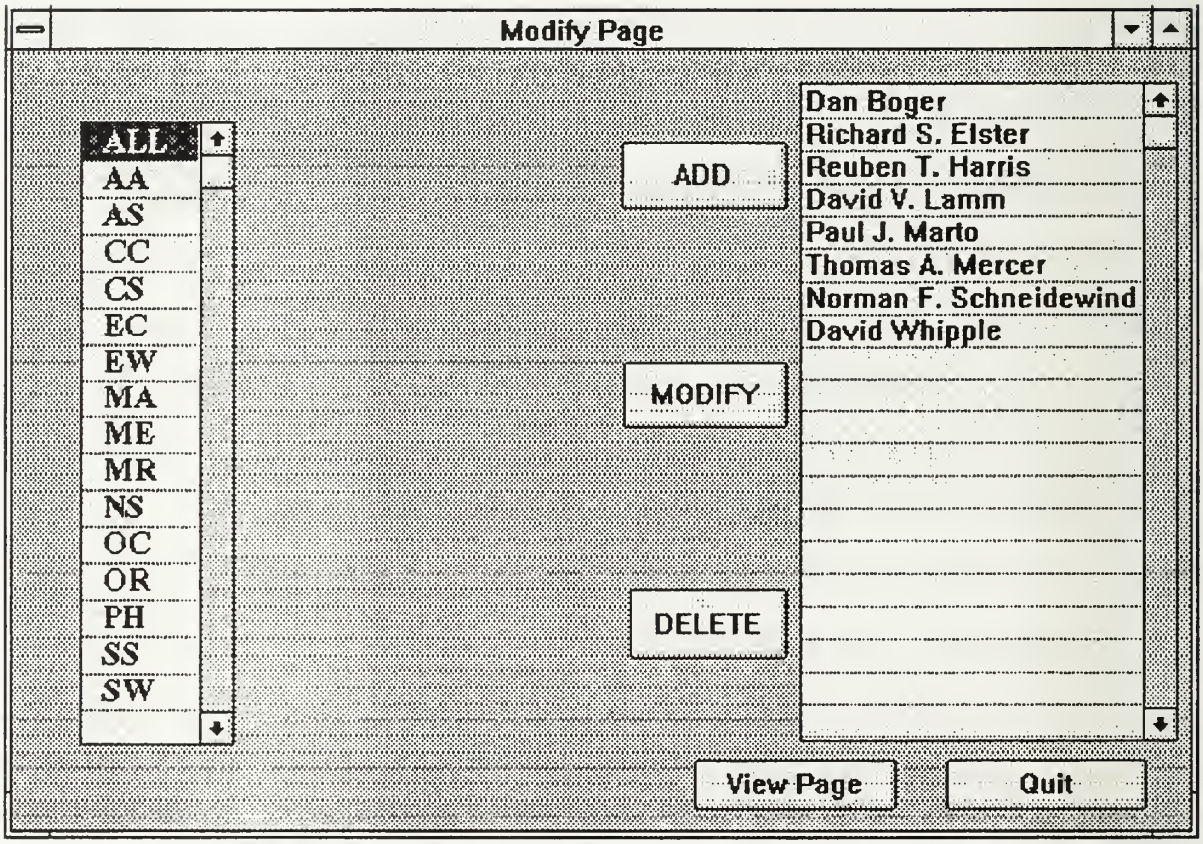

Figure 8 *Modify* Page

2. RESUME Book

Selecting a name in the INSTRUCT book will navigate the user to the proper faculty member's data in the RESUME book. The RESUME book contains pertinent data and a photograph of the selected professor, as shown in Figure 9. All of the objects in this book were created on the background, except the photograph and text. Designing a book using the background significantly reduces file size and ensures conformity. Objects appear in the same position, style, and size on every page that share the same background.

Text in all of the fields can be in different formats. However, standardization for the faculty resumes will give the EIS system a more professional appearance. The Dean of Research should outline a preference for a standard format to all the other departments to ensure conformity.

To make the file size stay as small as possible, there is a handler to compact a book whenever a record or photograph is deleted. This compact book subroutine was necessary because Multimedia ToolBook reserves space for an object that is deleted, until a compact book message is generated.

3. PUBS and AWARDS Books

Although these two books contain different information, they are identical in format and design, so only the PUBS book will be discussed. To view a faculty member's publications, the user clicks the PUBS button while in the

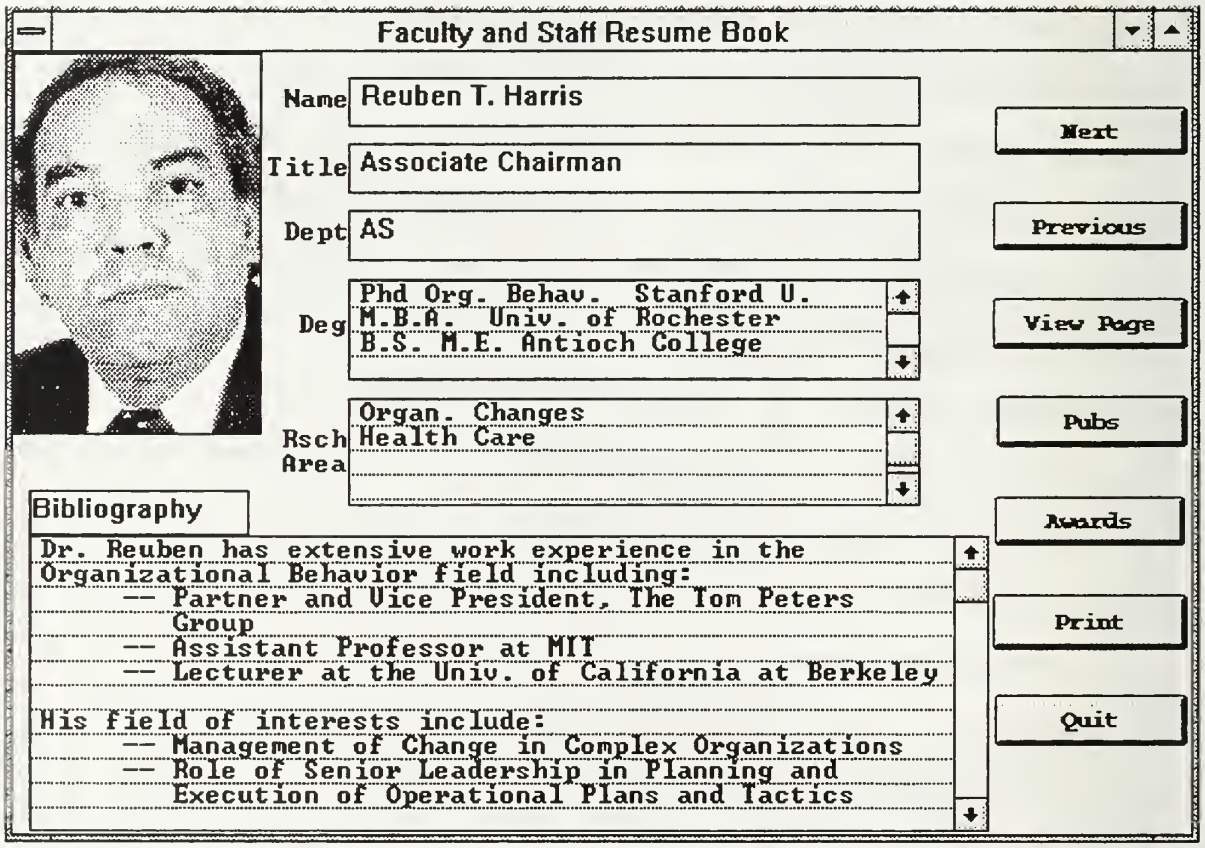

Figure 9 *Resume Book* Page

RESUME book. This navigates the user to the corresponding PUBLICATIONS page, as shown in Figure 10. The five most significant publications of a faculty member will be displayed. A printout of these publications is available if the user clicks the print button.

The PUBLICATION fields contain scroll bars to view the information that is not visible. This allows text that will not fit on three lines to be shown. All the PUBS and AWARDS book objects were created entirely on the background. This reduces file size and provides a standard format for all the pages in these two books.

The user can navigate to the matching AWARDS or RESUME page from the PUBS book. Hypernavigation is what allows the user to go the correct page, vice just going to the next page in a book. A user can examine all the information on a faculty member, before looking at the next person. This nonlinear navigation greatly increases the functionality and flexibility of the EIS system. Access to additional information is readily available. For more indepth detail on how to use the EIS system, see the User's Manual in Appendix A.

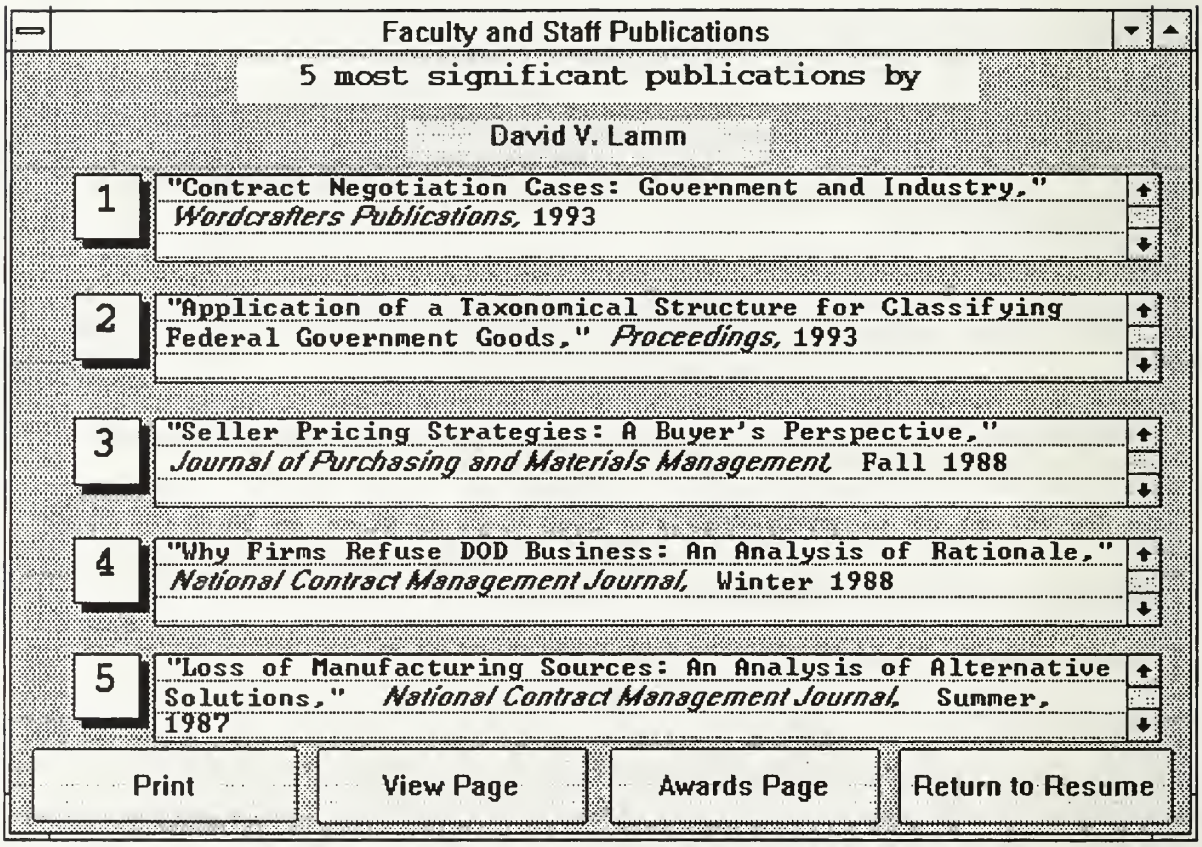
Faculty and Staff Publications
5 most significant publications by
David V. Lamm
1
"Contract Negotiation Cases: Government and Industry,"
Wordcrafters Publications, 1993
2
"Application of a Taxonomical Structure for Classifying Federal Government Goods," Proceedings, 1993
3
"Seller Pricing Strategies: A Buyer's Perspective,"
Journal of Purchasing and Materials Management, Fall 1988
4
"Why Firms Refuse DOD Business: An Analysis of Rationale,"
National Contract Management Journal, Winter 1988
5
"Loss of Manufacturing Sources: An Analysis of Alternative Solutions," National Contract Management Journal, Summer, 1987
Print
View Page
Awards Page
Return to Resume

Figure 10 *Publications Page*

V. CONCLUSIONS

Design, development, and implementation of the *Naval Postgraduate School Faculty and Staff Resume Book* EIS system was the result of this thesis. It provides the Dean of Research an EIS system that is easy to use, update, and maintain. Ensuring that these requirements were met was the focus of this thesis.

Asymetrix's Multimedia ToolBook software authoring package was found technically capable and well suited to handle the large amounts of faculty data needed for the Resume Book. Use of graphical user interface (GUI) and buttons allows easy access to desired information using hypernavigation. Nonlinear navigation greatly increases the flexibility and usefulness of the application, by increasing ease of data access. GUI is an integral design feature of the EIS system.

The current *Naval Postgraduate School Faculty and Staff Resume Book* is outdated and not well maintained. Two major problems with the old Resume book are the cumbersome updating process and lack of accessibility. Using the new EIS system will simplify the updating process. Electronic updates are faster, more timely, and more economical. Additionally, this EIS system was specifically designed to make data changes easy and modifications can be made at the department level. Easing

the updating process is paramount, otherwise the system will become unattractive to potential users.

Lack of accessibility is the other major problem with the old Resume Book. Although this thesis concentrated on producing an EIS system for a stand alone PC, the possibility of putting it on a LAN was incorporated into the design. The only other requirement is to put the EIS system files on a network server. Throughput delays that can occur on a network will not affect this system, because it consists of text and graphics only. There is no digitized audio or video.

Military organizations could benefit greatly using a similar EIS system. Simple modifications to the *Naval Postgraduate School Faculty and Staff Resume Book* EIS system would provide senior officers with a reliable method to track key personnel, qualifications, and other important data. In addition, employing GUI and hypernavigation ensures easy data access for users of all skill levels. GUI provides an uncomplicated means for senior officers to access important information quickly.

Multimedia can be especially useful in many other military applications. It can ease the processing of information, reduce training time and costs, and increase learning retention rates. Multimedia technology most likely will become the architecture of the future. Continuing research in multimedia technology provides an outstanding opportunity for

the Naval Postgraduate School to become a forerunner for the military services in this dynamic field.

Although the *Naval Postgraduate School Faculty and Staff Resume Book* EIS system just touches the tip of the multimedia iceberg, it provides a solid foundation on which to build. This EIS system provides an excellent beginning for exploring the capabilities of multimedia technology at the Naval Postgraduate School.

APPENDIX A: USER MANUAL

This User Manual will explain the purpose of each page and the function of every button in the four application books; INSTRUCT, RESUME, PUBS, and AWARDS. Further subdivisions will be **USER**, **MODIFIER**, and **SUPER USER**. A **USER** is someone viewing the Resume Book who is not authorized to make any changes. A **MODIFIER** is authorized to make changes to the faculty data, at the department level. A **SUPER USER** can modify the entire system, passwords, or *keywords*. Each of these categories has a different purpose on each page. This section will discuss all three categories for each page of the four books.

A. INSTRUCT BOOK

1. *Resume Book Instructions* Page

This page contains an overview on the purpose of the *Naval Postgraduate School Faculty and Staff Resume Book* and instructions on how to navigate through the system, as shown in Figure 11.

USER: *QUIT* button causes a dialog box to appear:

"Are you sure you want to exit the Faculty and Staff Resume Book"

with a ***YES*** and ***NO*** button. The ***YES*** or ***NO*** button must be responded to, before any other action can be taken. Selecting ***YES*** will exit the EIS system, and ***NO*** will return USER back to

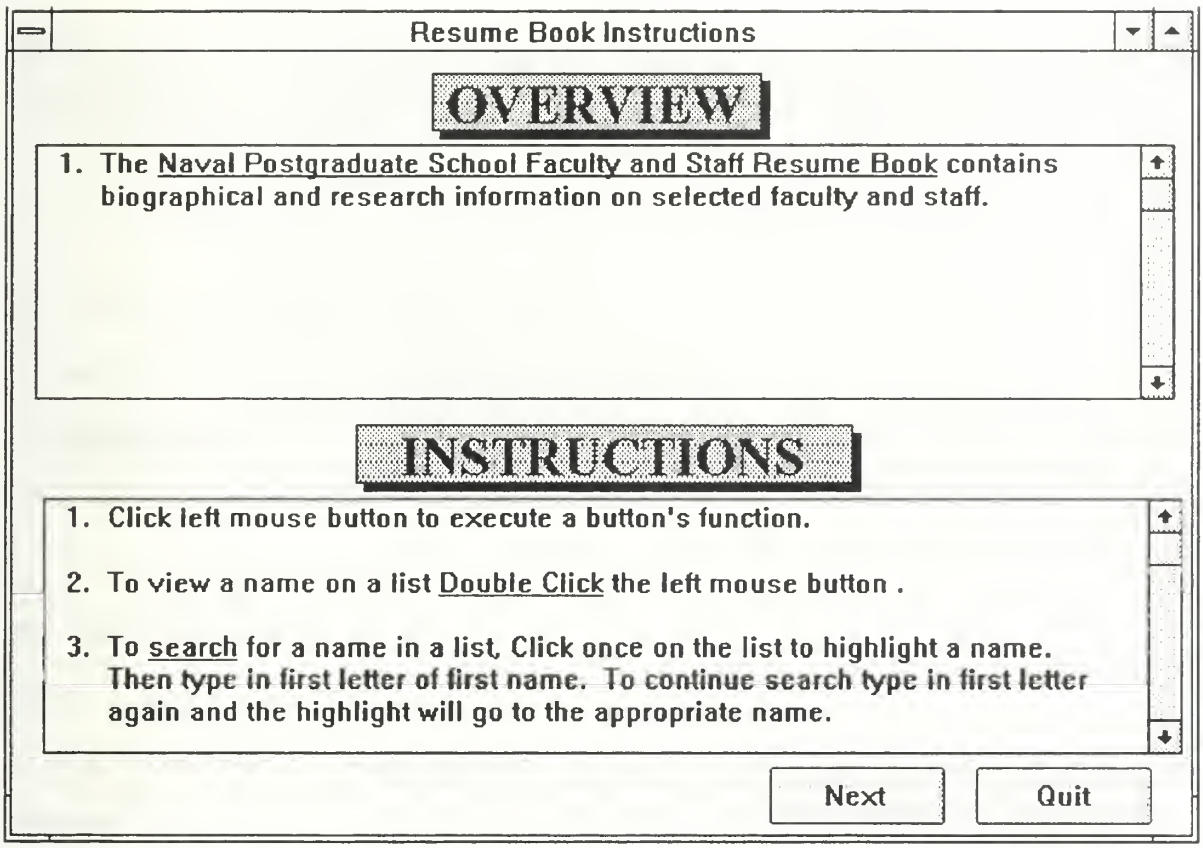
Resume Book Instructions
OVERVIEW
1. The Naval Postgraduate School Faculty and Staff Resume Book contains biographical and research information on selected faculty and staff.
INSTRUCTIONS
1. Click left mouse button to execute a button's function.
2. To view a name on a list Double Click the left mouse button .
3. To search for a name in a list, Click once on the list to highlight a name. Then type in first letter of first name. To continue search type in first letter again and the highlight will go to the appropriate name.
Next
Quit

Figure 11 *Resume Book Instructions* Page

the *Resume Book Instructions* page.

MODIFIER: N/A

SUPER USER: N/A

2. *Viewing Options* Page

This page displays the buttons to ***VIEW*** or ***MODIFY*** the *Naval Postgraduate School Faculty and Staff Resume Book* EIS system, as shown in Figure 12.

USER: Clicking the ***VIEW RESUME BOOK*** button will advance USER to *View* page. Depressing the ***MODIFY RESUME BOOK*** button causes a dialog box to appear:

"Please enter password"

A typical USER will not know the proper password and can select the ***CANCEL*** button to return to *Viewing Options* page. Incorrect entry of the password will cause a dialog box to appear:

"Sorry, password is incorrect"

and USER is returned to the *Viewing* page. ***PREVIOUS*** button takes USER back to the *Resume Book Instructions* page. ***QUIT*** button has the same function as previously described.

MODIFIER: Entering the correct password after depressing the ***MODIFY RESUME BOOK*** button navigates the MODIFIER to the *Modify* page. The *Modify* page allows faculty data to be revised. Modifications are to be made by authorized personnel only. The specifics of the updating process are described in detail later in this section.

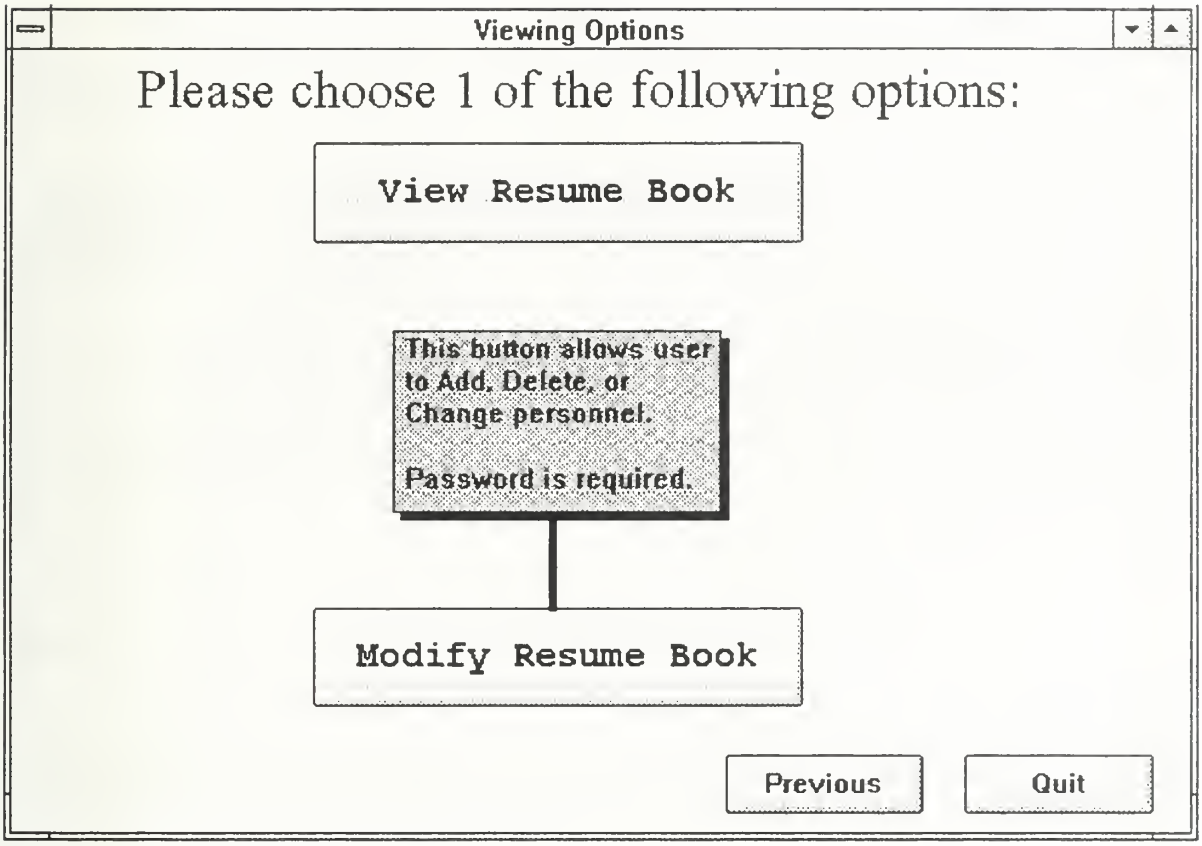

Figure 12 *Viewing Options* Page

SUPER USER: Entering the SUPER USER password after the ***MODIFY RESUME BOOK*** button is selected, causes a hidden red ***MODIFY PW*** button to appear on the *Viewing Options* page. The ***MODIFY PW*** button allows SUPER USER to change the password needed to enter the *Modify* page. Clicking this button generates a dialog box requesting:

"Please type in NEW password"

After the new password is entered, another dialog box will appear:

"Please type in NEW password AGAIN to verify password"

If the new password is correctly entered again, a dialog box will be generated:

"Password for access to Modify Page is changed"

If the new password is entered incorrectly a dialog box will appear:

"Sorry, password did not change"

When the SUPER USER leaves the *Viewing Options* page the ***MODIFY PW*** button will disappear.

3. *View* Page

On the *View* page the user has the option of looking at the data of faculty members by DEPARTMENT or RESEARCH, as shown in Figure 13.

USER: Clicking the ***DEPT*** or ***RESEARCH*** button will cause a listbox to appear that is concealed below the respective button. The DEPT listbox contains an index of all the

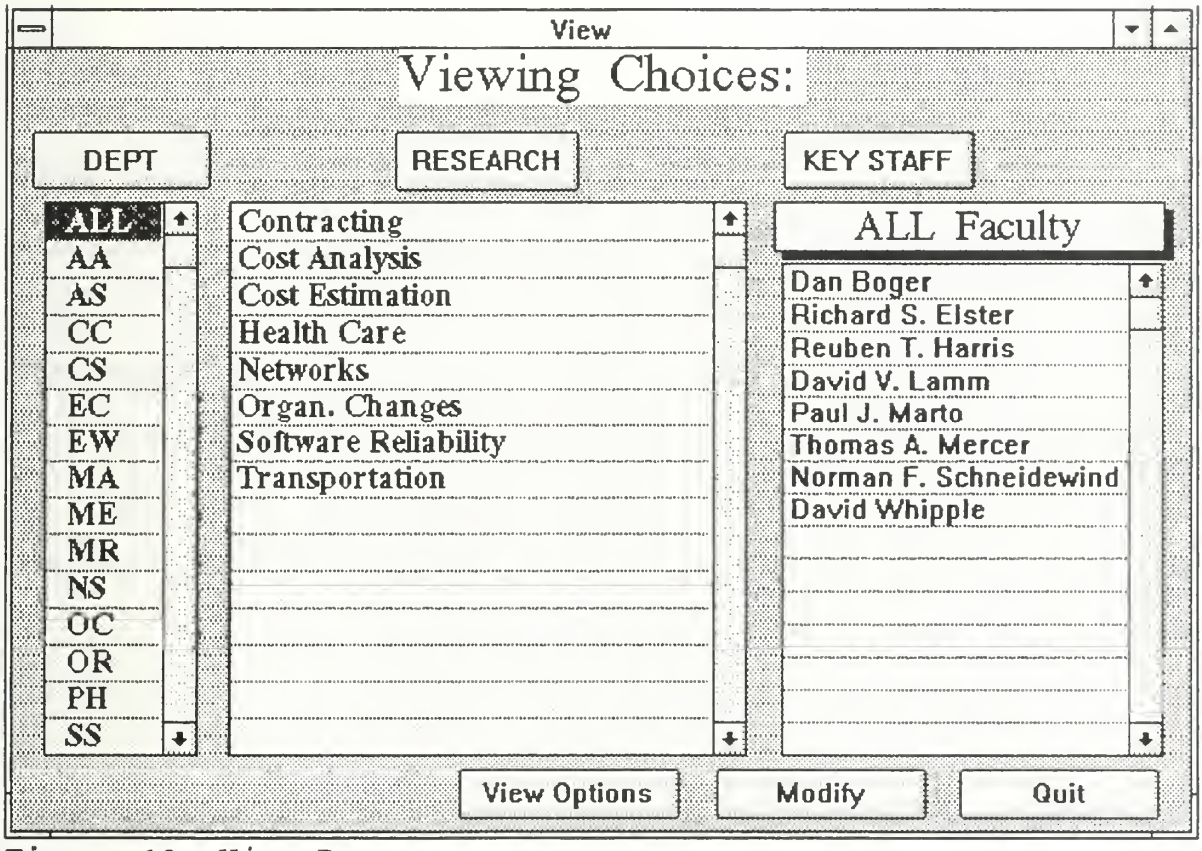

Figure 13 *View* Page

departments and academic groups at NPS. The RESEARCH listbox has *keywords* that link faculty members together by research area. Making a selection in either listbox will sort through the list of faculty and display the appropriate names in the PERSONNEL listbox. The selected DEPARTMENT or RESEARCH keyword is displayed above the PERSONNEL listbox to provide a quick reference for the USER.

Double-clicking a name in the PERSONNEL listbox will navigate the USER to the appropriate record in the RESUME Book. A USER can now examine the faculty records whose names were listed. Clicking the ***VIEW OPTIONS*** button will take the USER to the *Viewing Options* page. The ***KEYSTAFF*** button navigates the USER to the *Keystaff* page. The ***MODIFY*** and ***QUIT*** buttons have the same functions as previously described.

MODIFIER: The ***MODIFY*** button will function as previously described, when the MODIFIER enters the proper password.

SUPER USER: N/A

4. *Key Staff* Page

The *Key Staff* page is similar to the *View* page. ***DEANS, CHAIRS***, and ***MILITARY*** personnel names can be listed by clicking the appropriate button, as shown in Figure 14.

USER: Clicking the ***DEANS, CHAIRS,*** or ***MILITARY*** button will sort through the Resume Book and display the appropriate names in the KEYSTAFF listbox. The selected category will be

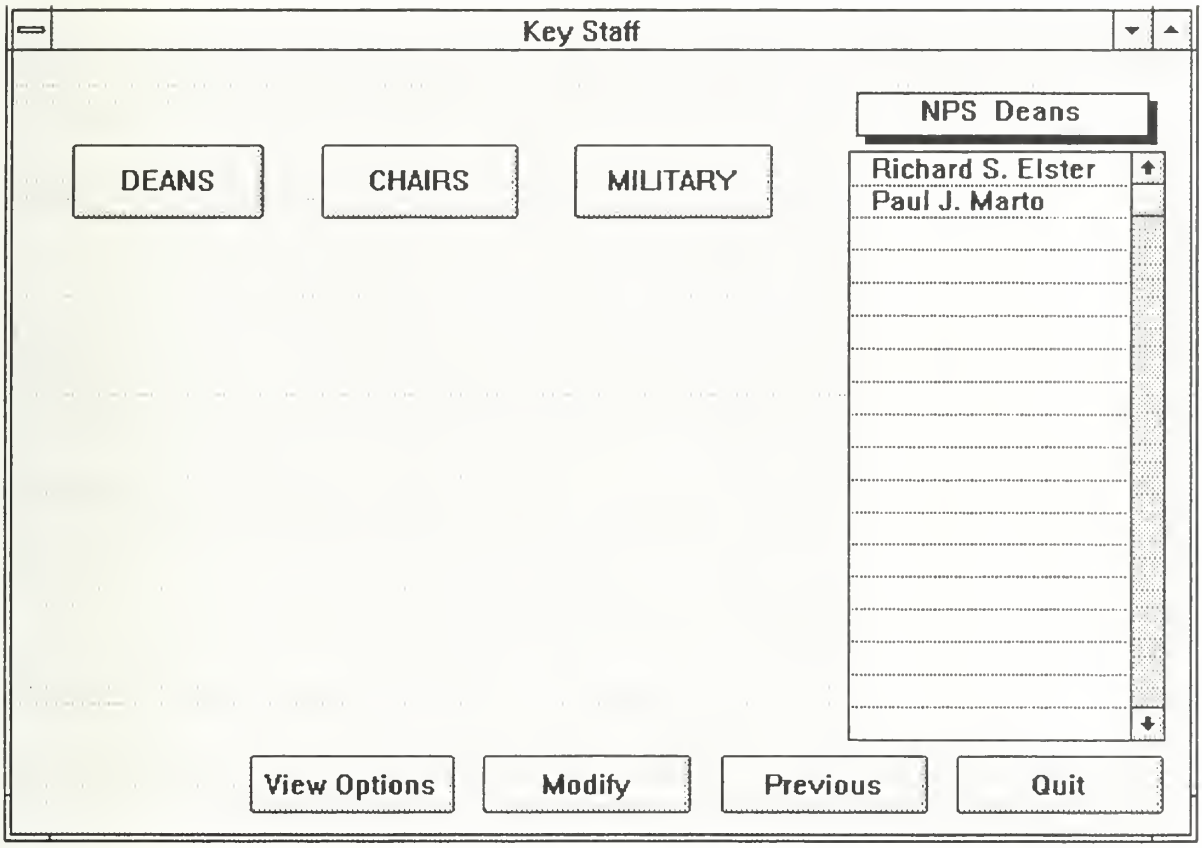

Figure 14 *Key Staff* Page

displayed above the KEYSTAFF listbox to provide an easy reference for the USER. Double-clicking a name in the KEY STAFF listbox will navigate the USER to the appropriate record in the RESUME book.

The ***PREVIOUS*** button takes the USER back to the *View* page. The ***VIEW OPTIONS, MODIFY*** and ***QUIT*** buttons all have the same functions as previously described.

MODIFIER: The ***MODIFY*** button will function as previously described, when the MODIFIER enters the proper password.

SUPER USER: N/A

5. ***Modify* Page**

The *Modify* page allows for the updating of personnel, *keywords*, and passwords. This page can only be accessed by entering the correct password when the MODIFY button is selected.

USER: N/A

MODIFIER: A MODIFIER must enter the correct department password in order to make modifications, as shown in Figure 15. When a department identifier is clicked, a dialog box will appear:

"Please enter correct password"

If the proper password is entered, the appropriate department faculty will be shown along with the ***ADD, MODIFY*** and ***DELETE*** buttons, as shown in Figure 16.

When the MODIFIER clicks the *ADD* button, a dialog box will appear:

"Are you sure you want to ADD a person"

with a *YES* or *NO* button. If *YES* is selected, the MODIFIER will go to a new page in the RESUME book. The MODIFIER can now enter faculty data on this page. Indepth update procedures are explained in greater detail later in this section.

When the MODIFIER selects the *MODIFY* button a dialog box is generated:

"Are you sure you want to modify the record of (selected name)"

with a *YES* or *NO* button. If the MODIFIER selects *YES*, then the EIS system will go to the corresponding page in the RESUME book. If MODIFIER selects *NO*, the MODIFIER is returned to the *Modify* page.

When the MODIFIER clicks the *DELETE* button a dialog box appears:

"Are you sure you want to delete the record of (selected name)"

with a *YES* or *NO* button. If the MODIFIER chooses *YES*, then all the data on the selected faculty member will be deleted. If MODIFIER selects *NO*, then he/she will be returned to the *Modify* page.

The *VIEW PAGE* and *QUIT* buttons function as previously described.

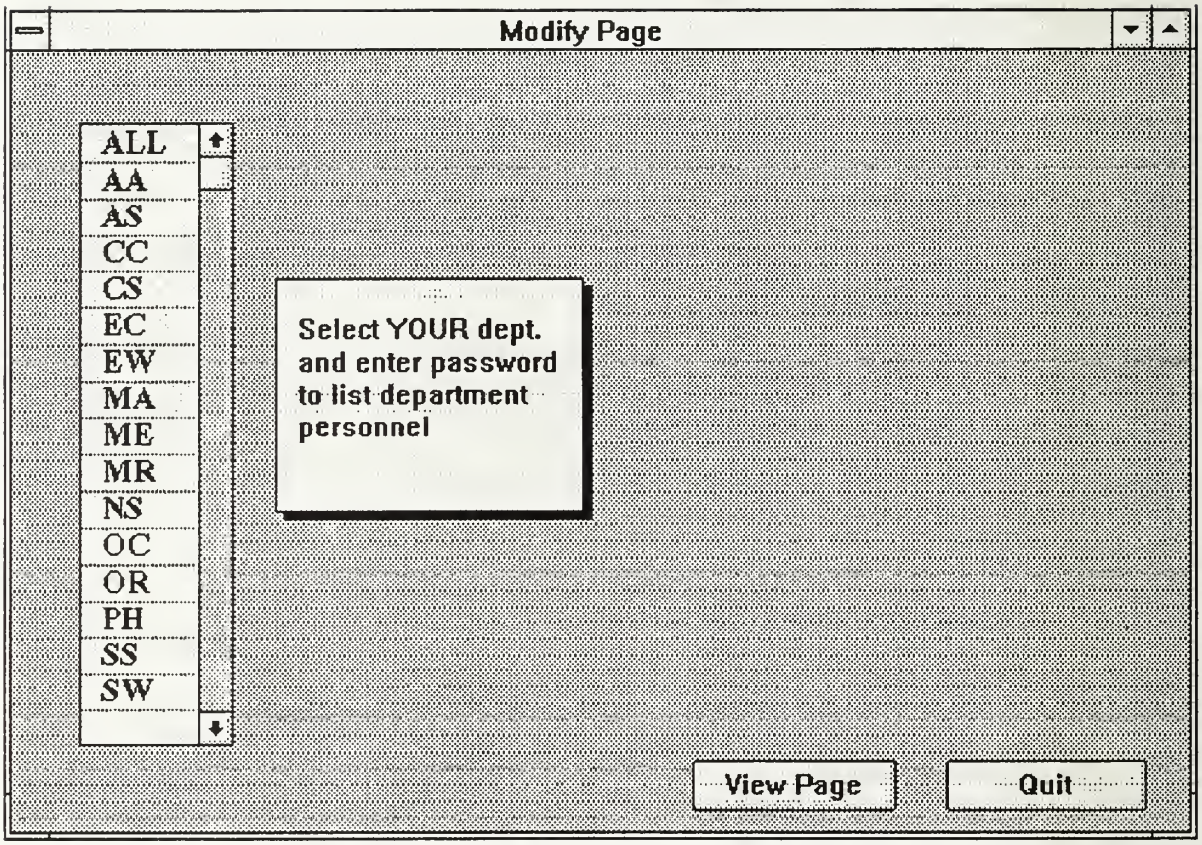

Figure 15 *Modify* Page

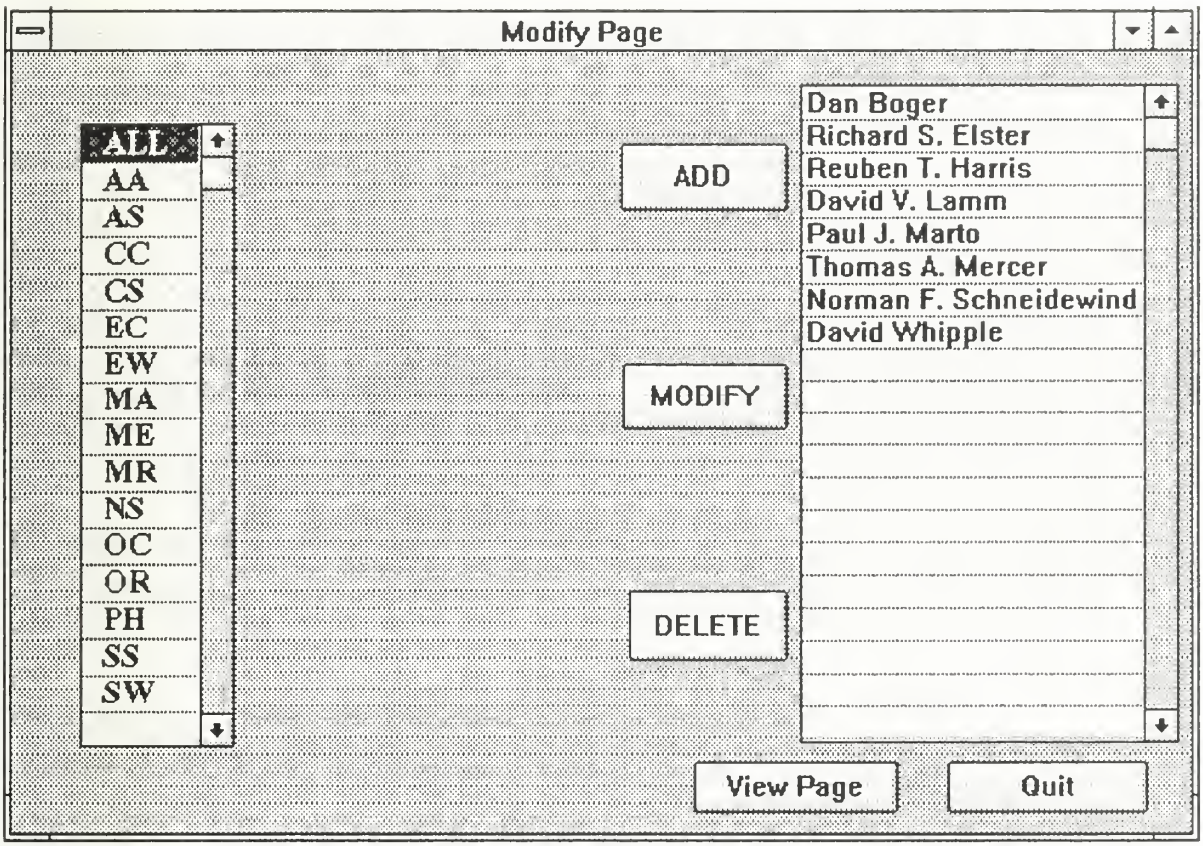

Figure 16 *Modify* Page (when modifications are being done)

SUPER USER: When SUPER USER selects ALL in the DEPARTMENT listbox, and enters SUPER USER password, two hidden red buttons will appear, ***MODIFY KEYWORDS*** and ***MODIFY PW***. Clicking the ***MODIFY KEYWORDS*** button results in the SUPER USER going to the *View* page and a dialog box will appear:

> ***"You must click the DONE button when finished updating the DEPT or RESEARCH keyword"***

with an ***OK*** button. After the SUPER USER clicks ***OK***, the cursor will be flashing in the RESEARCH listbox. The SUPER USER can start typing updated *keywords* in the RESEARCH and/or DEPT listbox. For example, changing the two letter identifier for the AS department is a three step process. Just highlight AS in the DEPARTMENT listbox with the mouse. Then type in the new identifier, i.e., SM and click the ***DONE*** button. This will automatically sort the listbox in alphabetical order. The same procedure is used when modifying the KEYWORD listbox.

When the SUPER USER clicks the red ***MODIFY PW*** button on the *Modify* page, a dialog box appears:

> ***"Please type in 2-letter identifier for dept. password you desire to change"***

with an ***OK*** and ***CANCEL*** button. The SUPER USER types in the two letter department identifier, i.e., CS, then selects ***OK***. A dialog box will appear:

> ***"Please type in NEW password for CS dept"***

with an ***OK*** and ***CANCEL*** button. After typing in the new password for the CS department another dialog box will appear:

"Please type in NEW password AGAIN to verify change of the CS dept. password"

with *OK* and *CANCEL*. If the SUPER USER exactly enters the new password again, a dialog box appears:

"The password for the CS dept. has been changed"

This confirmation process provides error trapping to ensure the SUPER USER truly desires to modify the password.

B. RESUME BOOK

All of the fields and buttons in this book are created on the background. Therefore, all pages are the same, except for the text concerning a particular faculty member. Consequently, there is only one page that needs to be discussed in the RESUME book.

1. *Resume* Page

This page contains biographical and research information on a selected faculty member, see Figure 17. Fields that contain additional information which cannot be seen, have scroll bars to view the hidden text.

USER: The *NEXT* button goes to the ensuing faculty member's record. For example, if a USER selected the CS department, the *NEXT* button would go to the subsequent CS faculty member in alphabetical order. The *PREVIOUS* button goes to the next record in reverse alphabetical order. To return to the *View* page in the INSTRUCT book, the USER clicks the *VIEW PAGE* button.

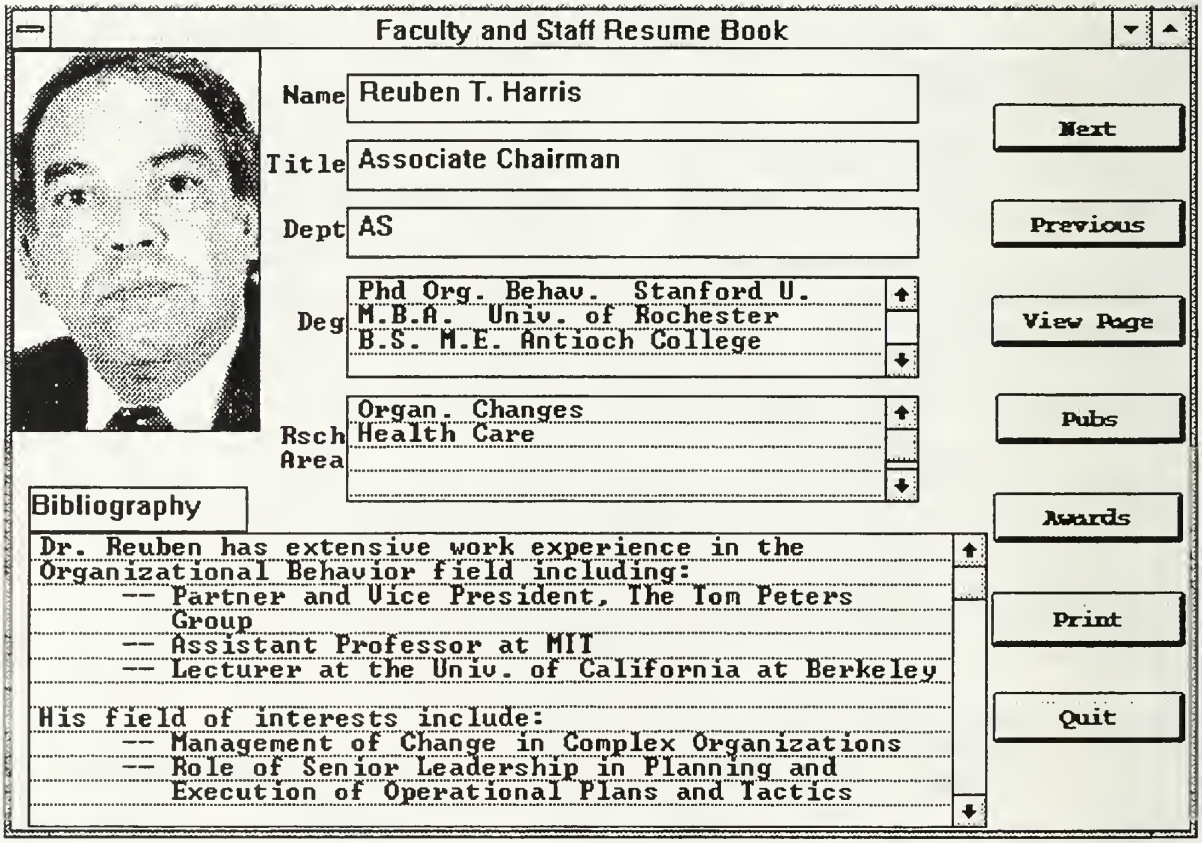

Figure 17 *Resume* Page

To examine a faculty member's five most significant publications, the USER clicks the ***PUBS*** buttons. This navigates the USER to the corresponding page in the PUBS book.

To examine the five most significant AWARDS, the USER clicks the ***AWARDS*** button. This navigates the USER to the corresponding page in the AWARDS book.

To print a hard copy of a faculty's resume the USER clicks the ***PRINT*** button. The ***QUIT*** button exits the *Naval Postgraduate School Faculty and Staff Resume Book* EIS system.

MODIFIER: The MODIFIER can change faculty data for his department only. The INSTRUCTIONS field will appear in the upper right-hand corner to help the MODIFIER in making the changes, as shown in Figure 18. Each field of text can be modified by using the TAB key or by clicking the mouse to move the cursor to the desired field.

The NAME field can contain up to 60 alphabetical characters, but no numbers. When finished with the NAME field the MODIFIER can either TAB or click the mouse arrow to the next field that needs updating. For example, after typing in a faculty member's name, the MODIFIER just depresses the ***TAB*** button to move the cursor to the TITLE field.

The TITLE field can contain up to 60 alphanumeric characters. Additionally, this field must contain the words **Dean, Chair,** or **Military** if they are to be accessed by the ***DEANS, CHAIRS,***or ***MILITARY*** buttons in the INSTRUCT book. For example, when entering Dean Marto's record, the TITLE field

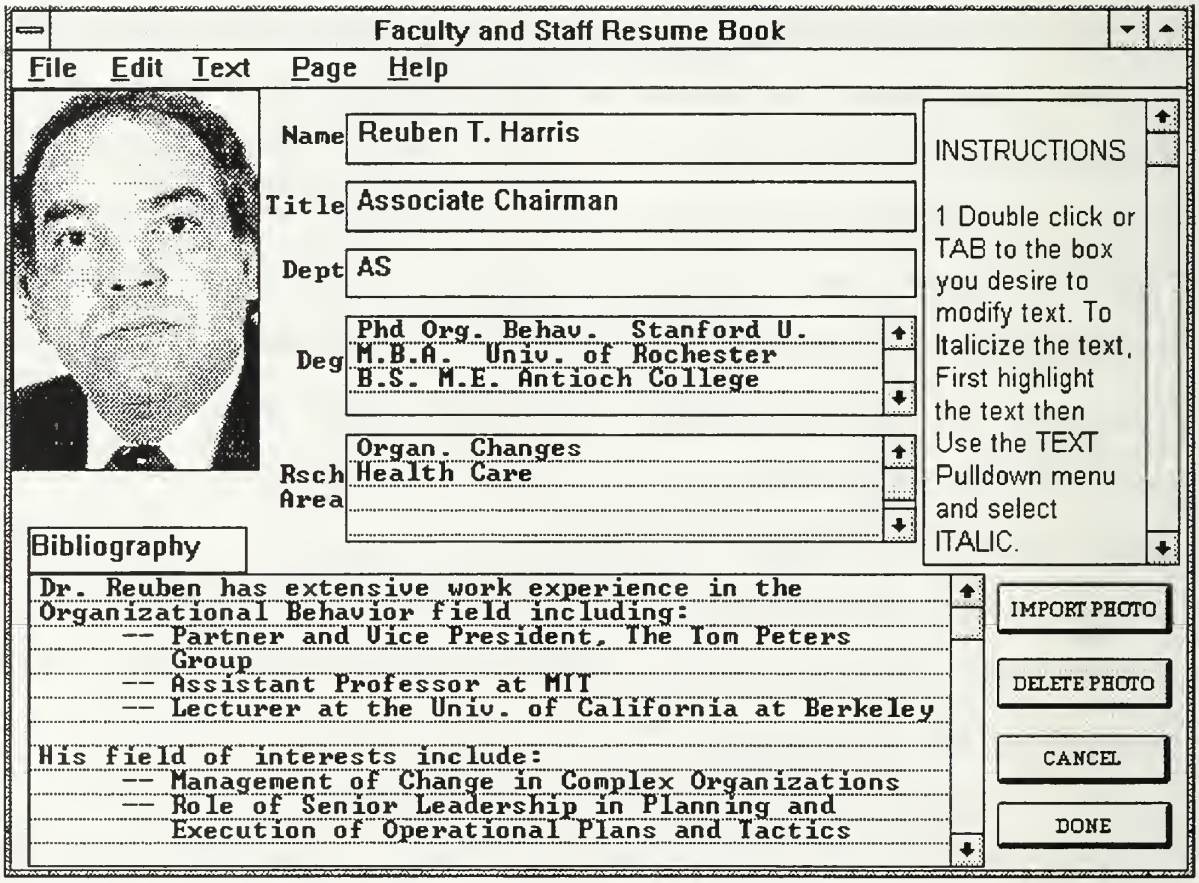
Faculty and Staff Resume Book
File Edit Text Page Help
Name Reuben T. Harris
Title Associate Chairman
Dept AS
Deg Phd Org. Behav. Stanford U.
M.B.A. Univ. of Rochester
B.S. M.E. Antioch College
Rsch Area Organ. Changes
Health Care
INSTRUCTIONS
1 Double click or TAB to the box you desire to modify text. To Italicize the text, First highlight the text then Use the TEXT Pulldown menu and select ITALIC.
Bibliography
Dr. Reuben has extensive work experience in the Organizational Behavior field including:
-- Partner and Vice President, The Tom Peters Group
-- Assistant Professor at MIT
-- Lecturer at the Univ. of California at Berkeley
His field of interests include:
-- Management of Change in Complex Organizations
-- Role of Senior Leadership in Planning and Execution of Operational Plans and Tactics
IMPORT PHOTO
DELETE PHOTO
CANCEL
DONE

Figure 18 *Resume* Page (when modifications are being done)

should contain the word Dean, i.e., **Dean** of Research. As long as the word Dean is included anywhere in the TITLE field, this name will appear when the DEANS button is clicked. The same is true for the words Chair and Military. These words must appear in the text of the field TITLE, i.e., **Military** rank of Admiral.

The DEPT field must contain the two letter identifier for the various departments, i.e., SM, CS, etc. This will ensure the faculty name is listed when the department is selected.

The DEGREE field can contain up to 60 alphanumeric characters. The RESEARCH AREA field must contain the specified *keyword* maintained by the office of the Dean of Research. This will allow a faculty member's name to appear when a *keyword* is selected in the INSTRUCT book.

The BIBLIOGRAPHY field can contain an unlimited number of alphanumeric characters. Scroll bars are available for viewing additional text that is not visible.

Clicking the *IMPORT PHOTO* button will cause a dialog box to appear:

> ***"What is the complete file path and name of the photo you wish to import including extension, for example, b:\smith.bmp"***

with an *OK* and *CANCEL* button. The complete file name for the photo should be entered, then the *OK* button clicked. This will import the photograph to the correct location and size.

Before importing, the photo should be scanned and then cropped to 1.25 inches wide by 2 inches long. If a black and white photo is used, it must be scanned in using 256-gray scale to achieve the desired quality. To delete a photo just click the ***DELETE PHOTO*** button. This will delete the current photo and compact the book.

When finished, and all the changes need to be saved, click the ***DONE*** button. A dialog box will appear:

"Are you finished with this page"

with a ***YES*** or ***NO*** button.

Selecting ***YES*** will cause another dialog box to appear:

"Select other pages you need to modify for (selected faculty)"

with a ***PUBS, AWARDS,*** and ***NONE*** button. Selecting either the ***AWARDS*** or ***PUBS*** button will navigate the MODIFIER to the appropriate page. The ***NONE*** button navigates back to the *Modify* page in the INSTRUCT book.

To return to the RESUME book <u>without</u> saving any changes, click the ***CANCEL*** button. A dialog box will appear asking:

"Are you sure you don't want to save changes"

with a ***YES*** and ***NO*** button. Selecting ***YES*** navigates MODIFIER to the *Modify* page in the INSTRUCT book without saving any changes. Clicking the ***NO*** button returns the MODIFIER to the *Resume* page.

SUPER USER: N/A

C. PUBS BOOK

The PUBS book contains the five most significant publications of a faculty member.

USER: When the *PUBS* button is depressed on the *Resume* page, the five most significant publications of the selected faculty member are displayed, as shown in Figure 19. The USER can obtain a hard copy of the faculty member's publications by clicking the *PRINT* button. The *VIEW PAGE* button will navigate the user back to the *View* page in the INSTRUCT book. The *AWARDS* button will display the five most significant awards received by the faculty member. The *RETURN TO RESUME* button navigates the USER back to the appropriate page in the RESUME book. All the books are connected by hypernavigation. This nonlinear navigation ensures easy access to additional information.

MODIFIER: The PUBLICATIONS page for a faculty member can be updated by selecting the *PUBS* button when updating the RESUME book. The cursor will automatically go to the first field of the appropriate *Publications* page, see Figure 20. The MODIFIER can go to the next field by hitting the TAB key or clicking the mouse arrow in the desired field.

There are only two buttons for the MODIFIER to choose after changes are made, *CANCEL* and *DONE*. Clicking the *CANCEL* button causes a dialog box to appear:

> ***"Are you sure you DO NOT want to save modifications of (selected Faculty)"***

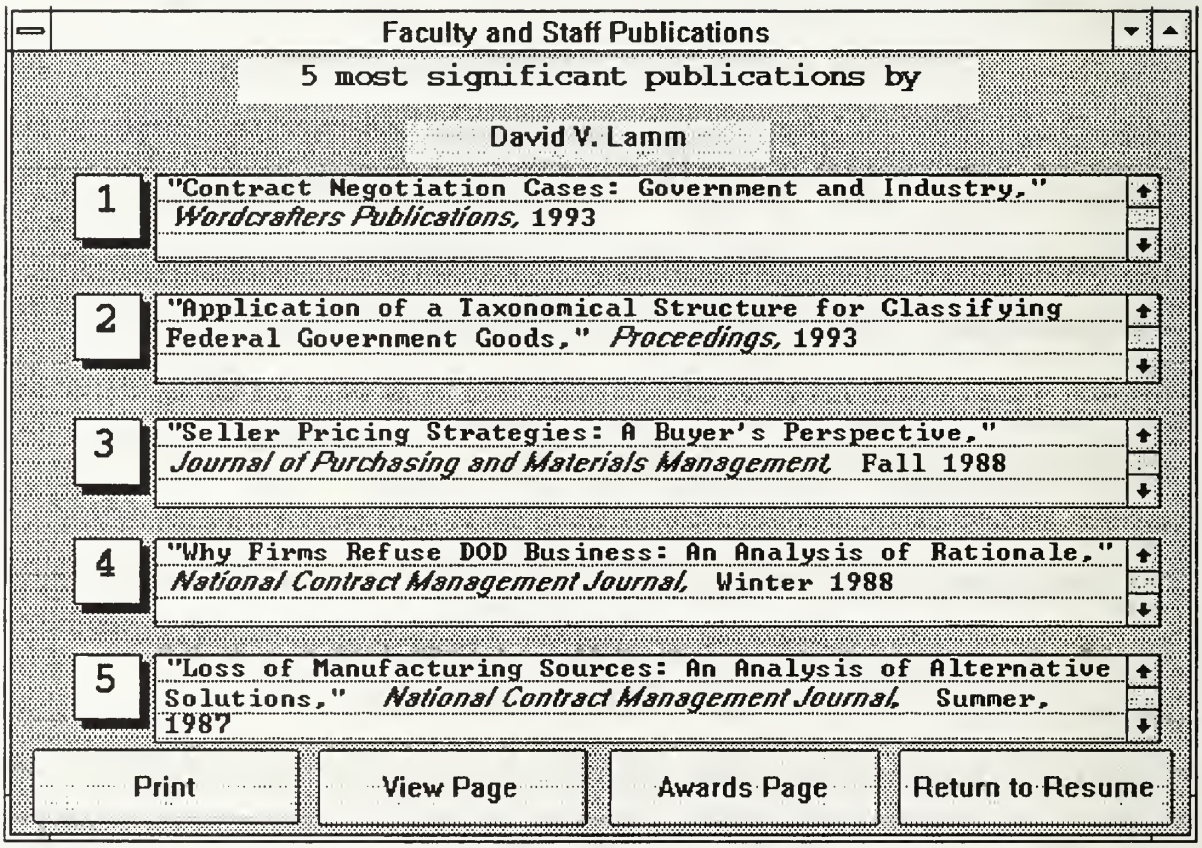
Faculty and Staff Publications
5 most significant publications by
David V. Lamm
1
"Contract Negotiation Cases: Government and Industry,"
Wordcrafters Publications, 1993
2
"Application of a Taxonomical Structure for Classifying Federal Government Goods," Proceedings, 1993
3
"Seller Pricing Strategies: A Buyer's Perspective,"
Journal of Purchasing and Materials Management, Fall 1988
4
"Why Firms Refuse DOD Business: An Analysis of Rationale,"
National Contract Management Journal, Winter 1988
5
"Loss of Manufacturing Sources: An Analysis of Alternative Solutions," National Contract Management Journal, Summer, 1987
Print
View Page
Awards Page
Return to Resume

Figure 19 *Publications* Page

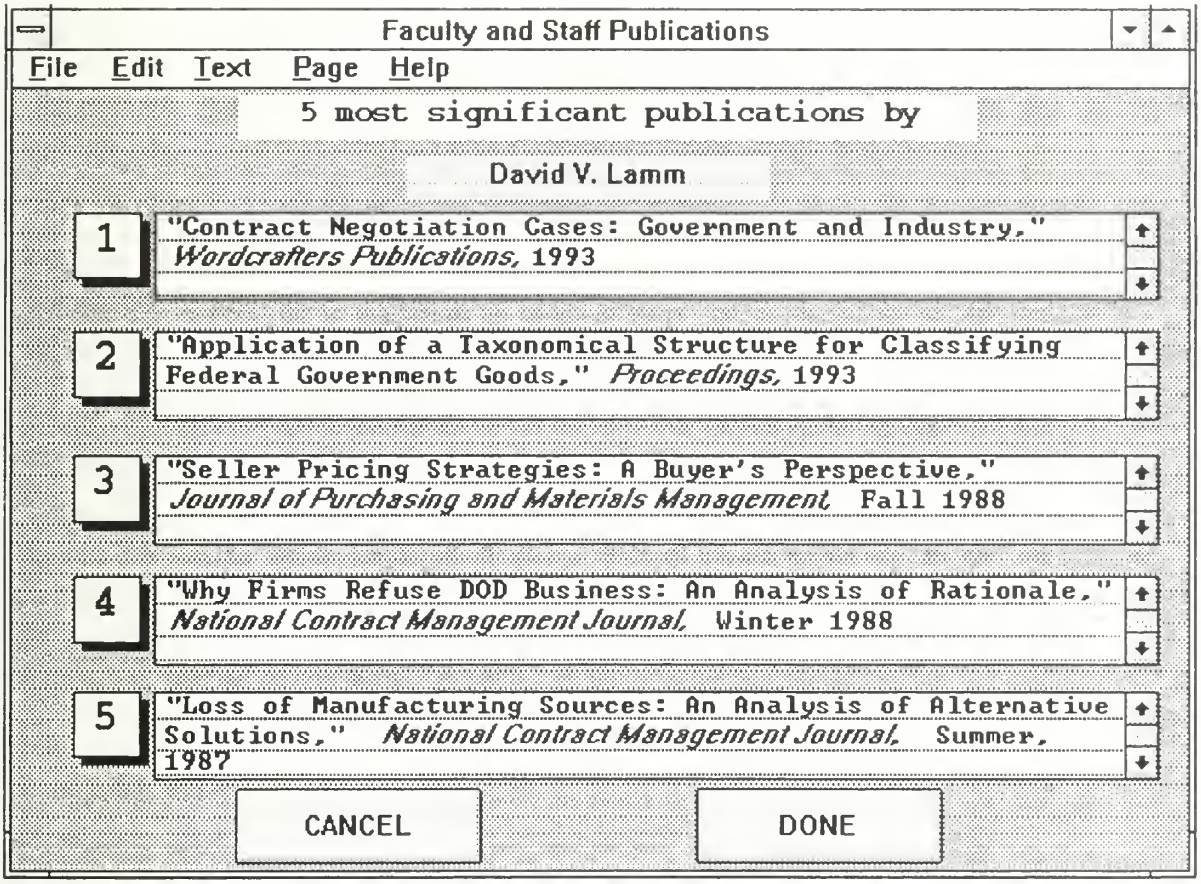
Faculty and Staff Publications
File Edit Text Page Help
5 most significant publications by
David V. Lamm
1
"Contract Negotiation Cases: Government and Industry," Wordcrafters Publications, 1993
2
"Application of a Taxonomical Structure for Classifying Federal Government Goods," Proceedings, 1993
3
"Seller Pricing Strategies: A Buyer's Perspective," Journal of Purchasing and Materials Management, Fall 1988
4
"Why Firms Refuse DOD Business: An Analysis of Rationale," National Contract Management Journal, Winter 1988
5
"Loss of Manufacturing Sources: An Analysis of Alternative Solutions," National Contract Management Journal, Summer, 1987
CANCEL
DONE

Figure 20 *Publications* Page (when modifications are being done)

with a ***YES*** or ***NO*** button. Selecting ***YES*** will send the MODIFIER back to the *Modify* page in the INSTRUCT book without saving any changes. Choosing ***NO*** returns MODIFIER to the PUBS book to allow more modifications or to save the changes.

Clicking the ***DONE*** button generates a dialog box asking:

"Are you finished with this page"

with a ***YES*** or ***NO*** button. Selecting ***YES***, saves all the changes and causes another dialog box to appear:

"Select other pages you need to modify for (selected faculty)"

with an ***AWARDS*** or ***NONE*** button. Choosing the ***AWARDS*** button takes the MODIFIER to the corresponding page in the AWARDS book. Selecting ***NONE*** returns USER to the *Modify* page in the INSTRUCT book.

SUPER USER: N/A

D. AWARDS BOOK

The AWARDS book contains the five most significant awards of a faculty member.

USER: When the ***AWARDS*** button is depressed on the *Resume* page, the five most significant awards of the selected faculty member are displayed, see Figure 21. The USER can obtain a hard copy of the faculty member's awards by clicking the ***PRINT*** button. The ***VIEW PAGE*** button will navigate the user back to the *View* page in the INSTRUCT book. The ***PUBS*** button will display the five most significant publications received by the

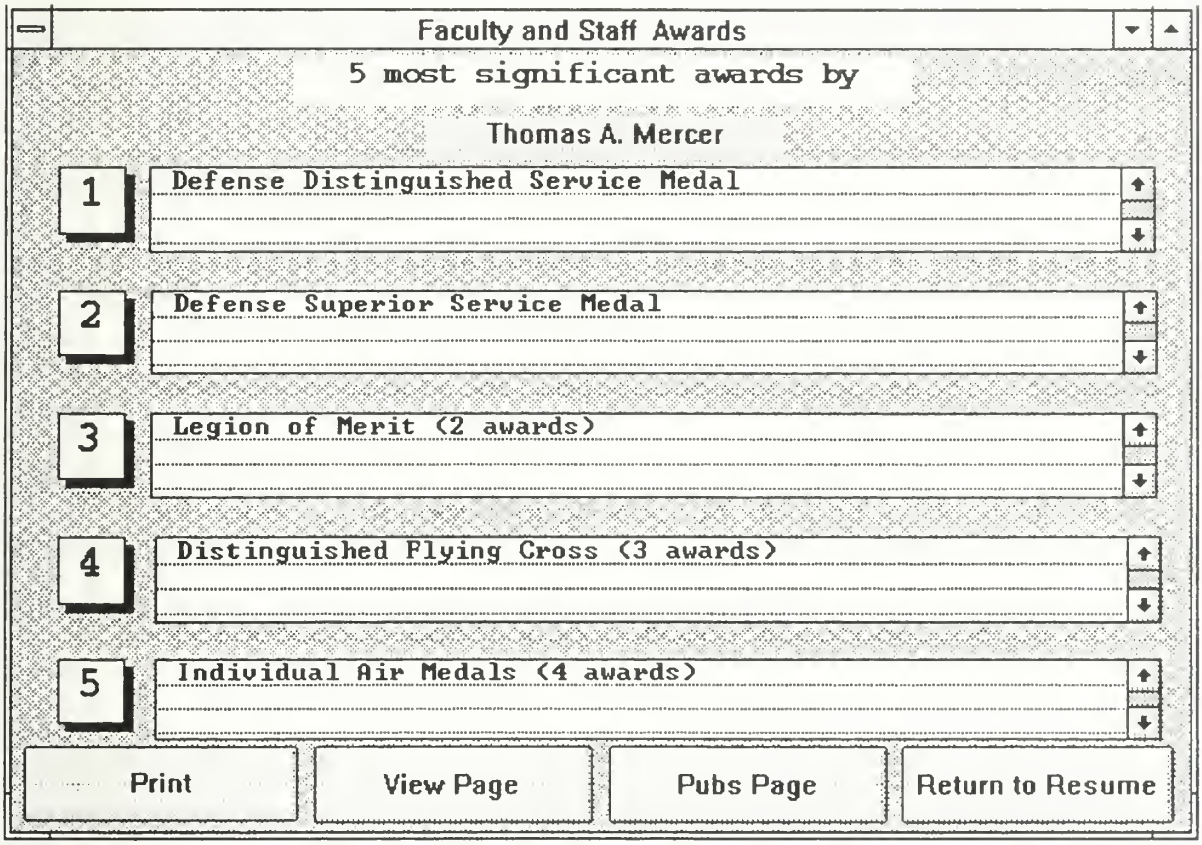

Figure 21 *Awards* Page

All the books are connected by hypernavigation. This nonlinear navigation ensures easy access to additional information.

MODIFIER: The *Awards* page for a faculty member can be updated by selecting the ***AWARDS*** button when updating the RESUME book. The cursor will automatically go to the first field of the appropriate *Awards* page, as shown in Figure 22. The MODIFIER can go to the next field by hitting the TAB key or by clicking the mouse arrow in the desired field.

There are only two buttons for the MODIFIER to choose after changes are made, ***CANCEL*** and ***DONE***. Clicking the ***CANCEL*** button causes a dialog box to appear:

> ***"Are you sure you DO NOT want to save modifications of (selected Faculty)"***

with ***YES*** or ***NO*** button. Selecting ***YES*** will send the MODIFIER back to the *Modify* page in the INSTRUCT book without saving any changes. Choosing ***NO*** returns MODIFIER to the AWARDS book to allow more modifications or to save the changes.

Clicking the ***DONE*** button generates a dialog box asking:

> ***"Are you finished with this page"***

with a ***YES*** or ***NO*** button. Selecting ***YES***, saves all the changes and causes another dialog box to appear requesting:

> ***"Select other pages you need to modify for (selected faculty)"***

with an ***PUBS*** or ***NONE*** button. Choosing the ***PUBS*** button takes the MODIFIER to the corresponding page the PUBS book.

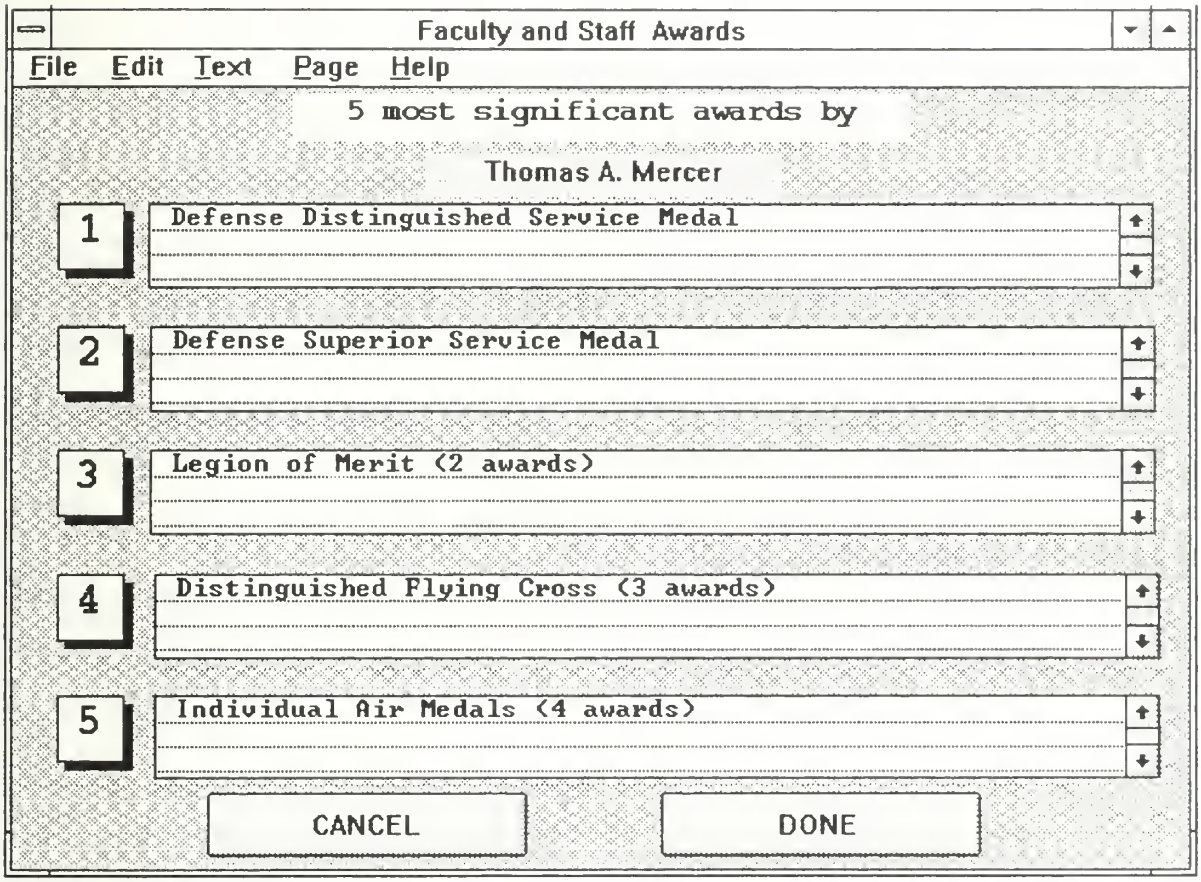

Figure 22 *Awards* Page (when modifications are being done)

Selecting ***NONE*** returns USER to the *Modify* page in the INSTRUCT book.

SUPER USER: N/A

APPENDIX B: SOURCE CODE

This appendix contains all the source code use in constructing the *Naval Postgraduate School Faculty and Staff Resume Book*.

```
script of Book "C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- script to add appearance of turning a page in a real book
and
-- compact this book

to handle next
    fxWipe right fast to gray
    fxWipe left fast to next page
end

to handle previous
    fxWipe left fast to gray
    fxWipe right fast to previous page
end


to handle enterBook
    restore system
    hide menubar
    hide statusBox
    send sizeToPage

    set sysChangesDB to false
    set det_mod_resume of background "resume" of book
    "resume_j.tbk"   to null
    set det_mod_pubs of background "pubs" of book
"pubs_j.tbk"    to null
    set det_mod_awards of background "awards" of book
    "awards_j.tbk"   to null
end

to handle compactBook
    local oldName
    set oldName to name of this book
    clear sysError
    save as "w.tbk",true
    save as oldName,true
```

```
end compactBook
script of background id 4 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- script to sort the DEPT and RESEARCH  fields

to handle INSERTIONSORTRESEARCH

    local   vLineCount,     --the number of lines in fTable
\
            vRecordNumber,  --the line number being inserted
\
            vCurKey,        --the current key value \
            vSortedCount,   --the number of records already
sorted \
            vTemp           --holder for the line being
inserted            during its deletion
    set sysLockScreen to true
    set fKeyNum to 1
    set vLineCount to textlinecount(text of field id 42 )
    conditions
        when vLineCount = 0
            set sysError to "Empty table"
            break
            when vLineCount = 1
            break   --it's already sorted!

            else
            step vRecordNumber from 2 to vLineCount
                if fKeyNum > itemcount (textline
vRecordNumber of     text of field id 42 )
                     set sysError to "Key number greater
than                 number of elements"
                    break
                end

                set vCurKey to item fKeyNum of textline
            vRecordNumber of text of field id 42
                set vSortedCount to vRecordNumber-1

        while   vSortedCount > 0 and \
         vCurKey < item fKeyNum of textline vSortedCount \
           of text of field id 42 as text
             decrement vSortedCount
        end
        set vTemp to textline vRecordNumber of text of field
id      42
        clear textline vRecordNumber of text of field id 42
        if vSortedCount<>vLineCount-1
            put vTemp & CRLF before textline vSortedCount+1
of text         of field id 42
        else
```

```
            put vTemp into textline vSortedCount+1 of text of
        field id 42
        end
      end
    end
 end

to handle INSERTIONSORTDEPT

    local   vLineCount,     --the number of lines in fTable
\
            vRecordNumber,  --the line number being inserted
\
            vCurKey,        --the current key value \
            vSortedCount,   --the number of records already
                    sorted \
            vTemp           --holder for the line being
inserted            during its  deletion


    set sysLockScreen to true
    set fKeyNum to 1
    set vLineCount to textlinecount(text of field id 29 )
    conditions
        when vLineCount = 0
            set sysError to "Empty table"
            break

        when vLineCount = 1
            break   --it's already sorted!

        else
            step vRecordNumber from 2 to vLineCount
                if fKeyNum > itemcount (textline
vRecordNumber of     text of field id 29 )
                  set sysError to "Key number greater than
number            of elements"
                  break
                end

                set vCurKey to item fKeyNum of textline
            vRecordNumber of text offield id 29
                set vSortedCount to vRecordNumber-1

        while   vSortedCount > 0 and \
         vCurKey < item fKeyNum of textline vSortedCount \
           of text of field id 29 as text
            decrement vSortedCount
        end
```

```
        set vTemp to textline vRecordNumber of text of field
id              29
        clear textline vRecordNumber of text of field id 29
        if vSortedCount<>vLineCount-1
            put vTemp & CRLF before textline vSortedCount+1
of text          of field id 29
        else
           put vTemp into textline vSortedCount+1 of text of
        field id 29
        end
     end
   end
  end

script of recordField ID 0 of background id 4 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- this script sends USER to appropriate page in the in the
     -- RESUME book
-- sets the list so that the faculty names that are present
can    -- be displayed
to handle buttonDoubleClick
    local thislist, pointer
    set syscursor to 4
    set syslockscreen to true
-- next line of code "strips" the name from the recordfield
and
-- puts the name into "it".  Asymetrix told me this one.
Very      -- difficult
    set thisList to text of recordField "list"
    while thisList contains crlf
        set char offset(cr,thisList) of thisList to ","
        set char offset(lf,thislist) of thislist to ""
    end while
    set pointer to SelectedTextLines of recordField "List"
    set MyListofPages of book "resume_j.tbk" to thislist
    set ThePageImOn of book "resume_j.tbk" to pointer
    save changes to book "resume_j.tbk"
    fxZoom fast to page SelectedText of book "resume_j.tbk"
    set sysLockscreen to false
    set syscursor to 1
end buttonDoubleClick

script of recordField ID 3 of background id 5 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- this script sends USER to appropriate page in the in the
     -- RESUME book
-- sets the list so that the faculty names that are present
can --- be displayed
to handle buttonDoubleClick
    set sysCursor to 4
    set sysLockScreen to true
```

```
    local pointer,thislist
    set thisList to text of recordField "key list"

    while thisList contains crlf
        set char offset(cr,thisList) of thisList to ","
        set char offset(lf,thislist) of thislist to ""
    end while
    set pointer to SelectedTextLines of recordField "key
list"
    set MyListofPages of book "resume_j.tbk" to thislist
    set ThePageImOn of book "resume_j.tbk" to pointer

    set sysChangesDB to false
    fxzoom fast to page SelectedText of book "resume_j.tbk"
    save changes to book "resume_j.tbk"
    set sysLockScreen to false
    set sysCursor to 1
end buttonDoubleClick


script of page id 0 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- This script causes the intro_page to pause 2 seconds
(only if
-- the <syslevel> is at reader level),wipe the current page
off    -- the screen
-- at a <normal> speed and leaving a <gray> screen.  Then
the      -- <next page>
-- is "wiped" in at a <fast> speed from right to left
-- caption of book is set to "Resume Book Instructions"

to handle enterPage
    set caption of this book to "Resume Book Instructions"
    if syslevel is reader
        pause 2 seconds
        fxWipe right normal to gray
        fxWipe left normal to next page
    end if
end enterPage


script of page id 1 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- changes the caption of the INSTRUCT book so that USER
will
-- know which page he is on

to handle enterPage
    set caption of this book to "Resume Book Instructions"
end
```

```
script of field ID 28 of page id 1 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- Script so that the "hidden field" of <button function>
goes     -- back to being hidden
-- when either the right or left mouse button is depressed.

to handle buttonUp
    hide self
    hide line "next_line"
    hide line "quit_line"
end buttonUp

to handle rightbuttonUp
    hide self
    hide line "next_line"
    hide line "quit_line"
end rightbuttonUp

script of button ID 34 of page id 1 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
--This command "sends" the "next" signal up the hierarchy
until
--it reaches the system level (in this case).  Toolbook
system
--sends the turn to next page signal

to handle buttonUp
    send next
end buttonUp

script of button ID 35 of page id 1 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- Script to exit Resume Book with warning displayed first
to handle buttonUp
    request "Are you sure you want to exit the Faculty and
Staff   Resume book" with "YES" or "NO"

    if it is "YES" then
        set sysChangesDB to false
        send exit
    end if
end

script of page id 2 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
to handle enterPage
    set caption of this book to "Viewing Options"
    hide button "modifyEntryPW"
end

to handle leavePage
```

```
    hide button "modifyEntryPW"
end


script of button ID 2 of page id 2 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- This script displays the <main menu field>
-- and hides the modify field
-- also allows a "hidden" field to appear to provide
amplyfing     -- info. to USER
-- when he puts cursor arrow in the VIEW button

to handle buttonUp
    hide field "main menu field"
    hide line "view_line"
    go to  page "logo_page" --goes to logo_page
end

to handle mouseEnter
    set text of field "main menu field" to\
        "This button allows user to view the Resume
Book."&&\
        "Click button to go to the View Page"
    show field "main menu field"
    show line "view_line"
end mouseEnter

to handle mouseLeave
    hide field "main menu field" of page "main_menu_page"
    hide line "view_line" of page "main_menu_page"
end mouseLeave


script of button ID 3 of page id 2 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- this makes a USER enter the correct password to gain
entry to
-- the Modify page

to handle buttonUp
    local pw

    hide field "main menu field"
    hide line "modify_line"
    ask password "Please enter password"
    set pw to it
--  request pw

    conditions
        when pw is null
         break conditions
```

```
        when pw is pwentry of this page
            set syscursor to 4
            set sysLockscreen to true
            hide button "modifyEntryPW"
            set sysSuspendMessages to true

            hide recordField "modify" of page "modify"
            hide group "buttons" of page "modify"
            set text of field "mod_inst" of page "modify" to
            crlf& "Select YOUR dept. and enter"&&\
            "password to list department personnel"

            hide button "modifyPW" of page "modify"
            hide button "modifyKeyWords" of page "modify"
            show field "mod_inst" of page "modify"
            set sysLockscreen to false
            fxZoom normal to page "modify"

            set caption of this book to "Modify Page"

            set sysCursor to 1
            set sysSuspendMessages to false

        when pw is "G_hCEQqqNvEAs"
            set sysLockScreen to true
            show button "modifyEntryPW"
            show menubar
            send sizeToPage
            set sysLockScreen to false
        else
            request "Sorry password is incorrect"
    end conditions
end

to handle mouseEnter
    set text of field "main menu field" to
        "This button allows user to Add, Delete, or Change
        personnel." & "Password is required."
    show field "main menu field"
    show line "modify_line"
end mouseEnter

to handle mouseLeave
    hide field "main menu field" of page "main_menu_page"
    hide line "modify_line" of page "main_menu_page"
end mouseLeave

script of button ID 12 of page id 2 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- script to "send" signal to ToolBook system to go back to
-- previous page
```

```
to handle buttonUp
    send previous
end buttonUp

script of button ID 16 of page id 2 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- Script to exit Resume Book with warning displayed first

to handle buttonUp
    request "Are you sure you want to exit the Faculty and
Staff   Resume book" with "YES" or "NO"

    if it is "YES" then
        save changes to this book
        send exit
    end if
end
script of button ID 22 of page id 2 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- this script changes the password needed to gain access to
     -- Modify page
-- this should only be changed by the SUPER USER

to handle buttonUp
    local pwChangerDept,pwChanger1,pwChanger2

    hide line "PW_line" of page "main_menu_page"
    hide field "main menu field" of page "main_menu_page"

    set it to null
    ask password "Please type in NEW password"

    if it is null then
        break buttonUp
    end if

    set pwChanger1 to it
    set it to null

    ask password "Please type in NEW password AGAIN to
verify  password"

    if it is null then
        break buttonUp
    end if
    set pwChanger2 to it

    If pwChanger1=pwChanger2 then
        set pwentry of this page to pwChanger2
        save changes to this book
```

```
        request "Password for access to Modify Page is
changed"
    else
        request "Sorry, password did not change"
    end if

    hide menubar
    send sizeToPage
end buttonUp

to handle mouseEnter
    set text of field "main menu field" to\
        "This button allows Super User to change the
        Password needed to access the Modify Page."
    show field "main menu field"
    show line "PW_line"
end mouseEnter

to handle mouseLeave
    hide field "main menu field" of page "main_menu_page"
    hide line "PW_line" of page "main_menu_page"
end mouseLeave

script of page id 3 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- script to automatically advance to viewing option page by
fast  -- <fxDissolve>

to handle enterPage
    if syslevel is reader
        set sysCursor to 4
        hide field "list heading" of page "view options"
        hide recordfield "list" of page "view options"
        hide field "dept_brkdwn" of page "view options"
        hide field "research_brkdwn" of page "view options"

        fxDissolve fast to next page

        set sysCursor to 1
    end if
end enterPage


script of page id 4 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- script to set the page display up before the USER sees
the      -- page

to handle leavePage
    clear text of recordfield "list"
    hide field "list heading"
```

```
    hide recordfield "list"
    hide field "dept_brkdwn"
    hide field "research_brkdwn"
    hide recordfield "key list" of background "key staff"
    hide field "key head" of page "key staff"

    set fieldType of field "research_brkdwn" to singleSelect
    set activated of field "research_brkdwn" to true
    set fieldType of field "dept_brkdwn" to singleSelect
    set activated of field "dept_brkdwn" to true

    hide button "done" of this page
    save changes to this book
end leavePage

to handle enterPage
    set sysCursor to 4
    set sysLockscreen to true
    set caption of this book to "View"
    hide button "done" of this page
    clear text of recordfield "list"
    hide field "list heading"
    hide recordfield "list"
    hide field "dept_brkdwn"
    hide field "research_brkdwn"
    hide recordfield "key list" of background "key staff"
    hide field "key head" of page "key staff"
    set sysCursor to 1
    set sysLockscreen to false
end enterPage

script of button ID 4 of page id 4 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- This script allow the <main menu field> to be displayed
and     -- hide the modify and quit lines.

to handle mouseEnter
    if visible of field "dept_brkdwn" is false then --so
won't    --  blink in bckgrd
        clear text of field "faculty"
        set text of field "faculty" to crlf&\
        "This button displays faculty by department"
        show field "faculty"
        show line "dept_line"
    end if
end mouseEnter

to handle mouseLeave
    hide field "faculty" of page "view options"
    hide line "dept_line" of page "view options"
end mouseLeave
```

```
to handle buttonUp
    hide field "faculty" of page "view options"
    hide line "dept_line" of page "view options"
    show field "dept_brkdwn"
end buttonUp

script of button ID 10 of page id 4 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- This script allow the <main menu field> to be displayed
and     -- hide the modify and quit lines.

to handle buttonUp
    hide field "research_staff field" of page "view options"
    hide line "research_line" of page "view options"
    show field "research_brkdwn"
end buttonUp

to handle mouseEnter
    if visible of field "research_brkdwn" is false
        clear text of field "research_staff field"
        set text of field "research_staff field" to
crlf&crlf&\
        "This button displays faculty by research area"
        show field "research_staff field"
        show line "research_line"
    end if
end mouseEnter

to handle mouseLeave
    hide field "research_staff field" of page "view options"
    hide line "research_line" of page "view options"
end mouseLeave

script of field ID 16 of page id 4 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
to handle buttonUp
    hide self
    hide line "faculty_line"
    hide line "dept_line"
    hide line "research_line"
    hide line "staff_line"
end buttonUp

to handle rightbuttonUp
    hide self
    hide line "faculty_line"
    hide line "dept_line"
    hide line "research_line"
    hide line "staff_line"
end rightbuttonUp
```

```
to handle enterPage
    if syslevel is reader then
        set visible to false
    else
        set visible to true
    end if
end enterPage

script of field ID 18 of page id 4 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
to handle buttonUp
    hide self
    hide line "faculty_line"
    hide line "dept_line"
    hide line "research_line"
    hide line "staff_line"
end buttonUp

to handle rightbuttonUp
    hide self
    hide line "faculty_line"
    hide line "dept_line"
    hide line "research_line"
    hide line "staff_line"
end rightbuttonUp

to handle enterPage
    if syslevel is reader then
        set visible to false
    else
        set visible to true
    end if
end enterPage

script of line ID 22 of page id 4 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
to handle enterPage
    if syslevel is reader then
        set visible to false
    else
        set visible to true
    end if
end enterPage

script of line ID 23 of page id 4 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
to handle enterPage
    if syslevel is reader then
        set visible to false
    else
        set visible to true
```

```
    end if
end enterPage

script of field ID 29 of page id 4 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- this script gets the appropiate names from the RESUME
book and  -- displays them in a list


to handle buttonUp
    set sysCursor to 4
    set sysLockscreen to true
    clear text of recordfield "list"

    conditions
        when selectedText contains "ALL"
            step i from 1 to pageCount of book
"resume_j.tbk"
                put text of recordField "name" of page i of
                book \"resume_j.tbk" & crlf after text of
                recordfield "list"
            end step

        step j from 1 to 2
            clear last char of text of recordfield "list"
        end step
        break conditions

        else
            step i from 1 to pageCount of book
"resume_j.tbk"
                if text of recordField "dept" of page i\
                 of book "resume_j.tbk" contains
                    selectedText
                    put text of recordField "name" of page
i                   of book \"resume_j.tbk" & crlf after
                    text of recordfield "list"
                end if
            end step

            step j from 1 to 2
                clear last char of text of recordfield
"list"
            end step
    end conditions

    show field "list heading"
    set text of field "list heading" to selectedText&&"
Faculty"
    show recordfield "list"
    set sysCursor to 1
```

```
    set sysLockscreen to false
end

script of field ID 42 of page id 4 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- this script gets the appropiate names from the RESUME
book and -- displays them in a list

to handle buttonUp
    set syscursor to 4
    set sysLockscreen to true
    show field "list heading"
    show recordfield "list"
    clear text of recordfield "list"

    step i from 1 to pageCount of book "resume_j.tbk"
        if text of recordField "research" of page i\
         of book "resume_j.tbk" contains selectedText
            put text of recordField "name" of page i of book
\
            "resume_j.tbk" & crlf after text of recordfield
            "list"
         end if
    end step

    step j from 1 to 2
        clear last char of text of recordfield "list"
    end step
    set text of field "list heading" to selectedText
    set syscursor to 1
    set sysLockscreen to false
end buttonUpscript of button ID 9 of page id 4 of Book


"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- this makes a USER enter the correct password to gain
entry to
-- the Modify page
to handle buttonUp
    local pw

    hide field "research_staff field" of page "view options"
    hide line "modify" of page "view options"
    ask password "Please enter password"
    set pw to it
    conditions
        when pw is null
         break conditions

        when pw is pwentry of page "main_menu_page"
            set syscursor to 4
```

```
            set sysLockscreen to true
            set sysSuspendMessages to true

            hide recordField "modify" of page "modify"
            hide group "buttons" of page "modify"
            set text of field "mod_inst" of page "modify" to
\
                "Select YOUR dept. and enter"&&\
                "password to list department personnel"

            hide button "modifyPW" of page "modify"
            hide button "modifyKeyWords" of page "modify"
            show field "mod_inst" of page "modify"

            set sysLockscreen to false
            fxZoom fast to page "modify"

            set caption of this book to "Modify Page"

            set sysCursor to 1
            set sysSuspendMessages to false
        else
            request "Sorry password is incorrect"
    end conditions
end buttonUp

to handle mouseEnter
    if visible of field "research_brkdwn" is false
        clear text of field "research_staff field"
        set text of field "research_staff field" to crlf&\
        "This button allows user to Add, Delete, or
Change"&&\          "personnel. Password is required."
        show field "research_staff field"
        show line "modify"
    end if
end mouseEnter

to handle mouseLeave
    hide field "research_staff field" of page "view options"
    hide line "modify" of page "view options"
end mouseLeave

script of button ID 68 of page id 4 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- This is script to handle the button properties.
-- If the left mouse button is clicked then the button's
-- function will be executed.

to handle buttonUp
    fxZoom fast to next page
end buttonUp
```

```
script of button ID 87 of page id 4 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- Script to exit Resume Book with warning displayed first


to handle buttonUp
    request "Are you sure you want to exit the Faculty and
Staff    Resume book" with "YES" or "NO"

    if it is "YES" then
        save changes to this book
        send exit
    end if
end

script of button ID 92 of page id 4 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- This is script to handle the button properties.
-- If the left mouse button is clicked then the button's
-- function will be executed.

to handle buttonUp
    go to page "main_menu_page"
endscript of button ID 95 of page id 4 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- script to reactivate the fields and automatically sort by
    -- alphabet

to handle buttonUp
    local checkDone
    request "Are you finished with this page" with "Yes" or
"No"
    set checkDone to it

    conditions
        when checkDone is "Yes"
            set sysCursor to 4
            set sysLockscreen to true
            set fieldType of field "research_brkdwn" to
            singleSelect
            set activated of field "research_brkdwn" to true
            set fieldType of field "dept_brkdwn" to
            singleSelect
            set activated of field "dept_brkdwn" to true

            hide self
            send insertionSortResearch to this background
            send insertionSortDept to this background
            save changes to this book
            set sysLockscreen to false
            set sysCursor to 1
```

```
    end conditions
end buttonUp


script of line ID 99 of page id 4 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
to handle enterPage
    if syslevel is reader then
        set visible to false
    else
        set visible to true
    end if
end enterPage

script of page id 5 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- script to set page display

to handle enterPage
    set caption of this book to "Key Staff"
    hide recordfield "key list"
    hide field "key head"
end enterPage

script of button ID 0 of page id 5 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- This script allow the <key staff field> to be displayed
and ---- hide the pointer lines.

to handle buttonUp
    hide field "instructions"
    hide line "deans_line"
    set syscursor to 4
    set sysLockscreen to true
    clear text of recordField "key list"

    step i from 1 to pageCount of book "resume_j.tbk"
        if text of recordField "title" of page i\
            of book "resume_j.tbk" contains  "Dean"
                put text of recordField "name" of page i of
                book "resume_j.tbk" & crlf after text of
                recordfield "key list"
        end if
    end step

    step j from 1 to 2
        clear last char of text of recordfield "key list"
    end step

    show recordfield "key list"
    set text of field "key head" to "NPS  Deans"
```

```
    show field "key head"
    set syscursor to 1
    set sysLockscreen to false
end

to handle mouseEnter
    set text of field "instructions" to\
        "This button displays the Deans of NPS"
    show field "instructions"
    show line "deans_line"
end mouseEnter

to handle mouseLeave
    hide field "instructions"
    hide line "deans_line"
end mouseLeave

script of button ID 2 of page id 5 of Book


"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- This script allow the <key staff field> to be displayed
and     -- hide the pointer lines.

to handle buttonUp
    hide field "instructions"
    hide line "chairs_line"
    set syscursor to 4
    set sysLockscreen to true
    clear text of recordField "key list"

    step i from 1 to pageCount of book "resume_j.tbk"
        if text of recordField "title" of page i\
         of book "resume_j.tbk" contains  "Chair"
            put text of recordField "name" of page i of book
\
            "resume_j.tbk" & crlf after text of recordfield
            "key list"
         end if
    end step

    step j from 1 to 2
        clear last char of text of recordfield "key list"
    end step

    show recordfield "key list"
    set text of field "key head" to "NPS  Chairpersons"
    show field "key head"
    set syscursor to 1
    set sysLockscreen to false
end
```

```
to handle mouseEnter
    set text of field "instructions" to\
        "This button displays the Chairpersons of NPS"
    show field "instructions"
    show line "chairs_line"
end mouseEnter

to handle mouseLeave
    hide field "instructions"
    hide line "chairs_line"
end mouseLeave


script of button ID 3 of page id 5 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- This script allow the <key staff field> to be displayed
and     -- hide the pointer lines.

to handle buttonUp
    hide field "instructions"
    hide line "military_line"
    set syscursor to 4
    set sysLockscreen to true
    clear text of recordfield "key list"

    step i from 1 to pageCount of book "resume_j.tbk"
        if text of recordField "title" of page i\
         of book "resume_j.tbk" contains  "Military"
            put text of recordField "name" of page i of book
\
            "resume_j.tbk" & crlf after text of recordfield
            "key list"
         end if
    end step

    step j from 1 to 2
        clear last char of text of recordfield "key list"
    end step

    show recordField "key list"
    set text of field "key head" to "NPS  Military"
    show field "key head"
    set sysCursor to 1
    set sysLockscreen to false
end

to handle mouseEnter
    set text of field "instructions" to\
        "This button displays the key military personnel
of              "NPS"
    show field "instructions"
```

```
    show line "military_line"
end mouseEnter

to handle mouseLeave
    hide field "instructions"
    hide line "military_line"
end mouseLeave


script of button ID 6 of page id 5 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
to handle buttonUp
    go to page "view options"
end

script of button ID 7 of page id 5 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
to handle buttonUp
    go to page "main_menu_page"
end

script of button ID 10 of page id 5 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- script to "send" signal to ToolBook system to go back to
-- previous page
to handle buttonUp
    send previous
end buttonUp


script of button ID 13 of page id 5 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- Script to exit Resume Book with warning displayed first

to handle buttonUp
    request "Are you sure you want to exit the Faculty and
Staff       "Resume book" with "YES" or "NO"

    if it is "YES" then
        save changes to this book
        send exit
    end if
end

script of button ID 18 of page id 5 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- Script to go to the "main_menu_page"

to handle buttonUp
    go to page "main_menu_page"
end
```

```
script of button ID 19 of page id 5 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- this makes a USER enter the correct password to gain
entry to
-- the Modify page

to handle buttonUp
    local pw

    hide field "research_staff field" of page "key staff"
    hide line "modify" of page "key staff"

    ask password "Please enter password"
    set pw to it
--  request pw

    conditions
        when pw is null
         break conditions

        when pw is pwentry of page "main_menu_page"
            set syscursor to 4
            set sysLockscreen to true
            set sysSuspendMessages to true

            hide recordField "modify" of page "modify"
            hide group "buttons" of page "modify"
            set text of field "mod_inst" of page "modify" to
            "Select YOUR dept. and enter"&&\
            "password to list department personnel"

            hide button "modifyPW" of page "modify"
            hide button "modifyKeyWords" of page "modify"
            show field "mod_inst" of page "modify"

            set sysLockscreen to false
            fxZoom fast to page "modify"

            set caption of this book to "Modify Page"

            set sysCursor to 1
            set sysSuspendMessages to false

        else
            request "Sorry password is incorrect"
    end conditions
end buttonUp

to handle mouseEnter
    clear text of field "research_staff field" of page "key
    staff"
```

```
    set text of field "research_staff field" of page "key
staff
     to "This button allows user to Add, Delete, or Change
        personnel."&crlf&\
      crlf&"Password is required."
    show field "research_staff field" of page "key staff"
    show line "modify" of page "key staff"
end mouseEnter

to handle mouseLeave
    hide field "research_staff field" of page "key staff"
    hide line "modify" of page "key staff"
end mouseLeave

script of field ID 20 of page id 5 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
to handle buttonUp
    hide self
    hide line "faculty_line"
    hide line "dept_line"
    hide line "research_line"
    hide line "staff_line"
end buttonUp

to handle rightbuttonUp
    hide self
    hide line "faculty_line"
    hide line "dept_line"
    hide line "research_line"
    hide line "staff_line"
end rightbuttonUp

to handle enterPage
    if syslevel is reader then
        set visible to false
    else
        set visible to true
    end if
end enterPage

script of line ID 21 of page id 5 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
to handle enterPage
    if syslevel is reader then
        set visible to false
    else
        set visible to true
    end if
end enterPage
```

```
script of page id 8 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
to handle enterPage
    set caption of this book to "Modify Page"
    send clearance to this page
    hide button "modifyPW"
end

to handle clearance
    set sysCursor to 4
    set sysLockscreen to true

    show recordField "modify"
    show group "buttons"
    hide field "mod_inst"
    clear text of recordfield "modify"
    save changes to this book

    conditions
        when updateModifyList of this background contains
"ALL"
            step i from 1 to pageCount of book
"resume_j.tbk"
                put text of recordField "name" of page i of
                book "resume_j.tbk" & crlf after text of
                recordfield "modify"
            end step

            step j from 1 to 2
                clear last char of text of recordfield
                "modify"
            end step

        when updateModifyList of this background <> "ALL"
            clear text of recordfield "modify"
            step i from 1 to pageCount of book
"resume_j.tbk"
                if text of recordField "dept" of page i of
                book "resume_j.tbk" contains
updateModifyList     of this background
                put text of recordField "name" of page i of
                book"resume_j.tbk" & crlf after text of
                recordfield "modify"
                end if
            end step
            step j from 1 to 2
                clear last char of text of recordfield
                "modify"
            end step
    end conditions
    set sysCursor to 1
```

```
    set sysLockscreen to false
end clearance
to handle leavePage
    hide button "modifyPW"
    hide button "modifykeywords"
    save changes to this book
end

script of button ID 1 of page id 8 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- script to allow user to MODIFY a person in the database

to handle buttonUp
    local pointer2
    set pointer2 to  null
    hide field "mod_inst"
    hide line "modify_line"

-- next line of code "strips" the name from the recordfield
and
-- puts the name into "it".  Asymetrix told me this one.
Very     -- difficult

    if (selectedtextLines of recordField "modify") <> null
        get textline (Selectedtextlines of recordField
        "modify")of text of recordField "modify"
        set pointer2 to it
    end if

    conditions
        when pointer2 is null
            request "You must first select a name from the
            list on the right"
            break conditions

        when pointer2 <> null
            request "Are you sure you want to modify the
            record of"&& pointer2 with "YES" or "NO"

                if it is "YES" then
                     set det_mod_resume of background
                     "resume" of book "resume_j.tbk" to
                     "modifier" set syscursor to 4
                     set sysLockscreen to true
                     save changes to this book
                     go to page pointer2 of book
                     "resume_j.tbk"
                end if
    end conditions
    set syscursor to 1
    set syslockscreen to false
```

```
end buttonUp


to handle mouseEnter
    set text of field "mod_inst" to\
        "To Modify a Record" & crlf & crlf&\
        "Select name from Personnel List." & crlf &crlf &\
        "Click Modify button"
    show field "mod_inst"
    show line "modify_line"
end mouseEnter

to handle mouseLeave
    hide field "mod_inst" of page "modify" of book
    "Instru_j.tbk"
    hide line "modify_line" of page "modify" of book
    "Instru_j.tbk"
end

script of button ID 0 of page id 8 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- script to allow user to ADD a person to the database

to handle buttonUp
    hide field "mod_inst"
    hide line "add_line"

    request "Are you sure you want to ADD a person"\
        with "YES" or "NO"

    conditions
        when it is "yes"
            set syscursor to 4
            set sysLockscreen to true
            set det_mod_resume of background "resume" of
book            "resume_j.tbk"to "Add"
            save changes to this book

            go to last page of book "resume_j.tbk"
            send newPage

            set syscursor to 1
            set sysLockScreen to false
    end conditions
end


to handle mouseEnter
    set text of field "mod_inst" to crlf &crlf&\
        "To Add a record"&crlf&crlf&\
        "Click Add button"
```

```
    show field "mod_inst"
    show line "add_line"
end mouseEnter

to handle mouseLeave
    hide field "mod_inst" of page "modify" of book
    "instru_j.tbk"
    hide line "add_line" of page "modify" of book
"instru_j.tbk"
end


script of button ID 2 of page id 8 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- script to allow user to ADD a person to the database

to handle buttonUp
    local pointer3, pointer4
    set pointer3 to null
    set pointer4 to null
    hide field "mod_inst"
    hide line "delete_line"

    if (selectedtextLines of recordField "modify") <> null
        get textline (Selectedtextlines of recordField
        "modify")of text of recordField "modify"
        set pointer3 to it
    end if

    conditions
        when pointer3 is null
            request "You must first select a name from the
            list on the right"

        when pointer3 <> null
            request "Are you sure you want to DELETE the
            record of"&& pointer3 with "YES" or "NO"

            if it is "YES" then
                save changes to this book
                set syscursor to 4
                set sysSuspendMessages to true
                set sysLockscreen to true
                go to page pointer3 of book "resume_j.tbk"
                select this page
                send clear
                send compactBook to this book

                go to  page pointer3 of book "pubs_j.tbk"
                    select this page
                    send clear
```

```
                    send compactBook to this book

                go to page pointer3 of book "awards_j.tbk"
                    select this page
                    send clear
                    send compactBook to this book
                    set sysSuspendMessages to false

                    go to page "modify" of book
                    "instru_j.tbk"
                    set sysLockscreen to false
            end if
    end conditions
set sysCursor to 1
end buttonUp

to handle mouseEnter
    set text of field "mod_inst" to\
        "To Delete a Record"&crlf&crlf&\
        "Select name from Personnel List"&crlf&crlf&\
        "Click Delete button"
    show field "mod_inst"
    show line "delete_line"
end mouseEnter

to handle mouseLeave
    hide field "mod_inst" of page "modify" of book
    "instru_j.tbk"
    hide line "delete_line" of page "modify" of book
    "instru_j.tbk"
end mouseLeave

script of field ID 9 of page id 8 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- script to check for correct password and then display
     -- appropriate list or deny access

to handle buttonUp
    local clearance,pw
    ask password "Please enter correct Password"
    set sysCursor to 4
    set pw to it
    set updateModifyList of this background to selectedText

--  request pw
--  break

    conditions
        when pw is null
            set updateModifyList of this background to null
            save changes to this book
```

```
            break conditions

        when pw is "G_hCEQqqNvEAs" and selectedText contains
        "ALL"
            set sysCursor to 4
            set sysLockScreen to true
            show menubar
            show button "modifyPW"
            show button "modifyKeywords"
            send clearance to this page
            send sizeToPage
            set sysLockScreen to false
            set sysCursor to 1
            break conditions
        when pw is pwall of this page and selectedText
contains        "ALL"
            send clearance to this page
            break conditions

        when pw is pwaa of this page and selectedText
contains        "AA"
            send clearance to this page
            break conditions

        when pw is pwas of this page and selectedText
contains        "AS"
            send clearance to this page
            break conditions

        when pw is pwcc of this page and selectedText
contains        "CC"
            send clearance to this page
            break conditions

        when pw is pwcs of this page and selectedText
contains        "CS"
            send clearance to this page
            break conditions

        when pw is pwec of this page and selectedText
contains        "EC"
            send clearance to this page
            break conditions

        when pw is pwew of this page and selectedText
contains        "EW"
            send clearance to this page
            break conditions

        when pw is pwma of this page and selectedText
contains        "MA"
```

```
            send clearance to this page
            break conditions

        when pw is pwme of this page and selectedText
contains        "ME"
            send clearance to this page
            break conditions

        when pw is pwmr of this page and selectedText
contains        "MR"
            send clearance to this page
            break conditions

        when pw is pwns of this page and selectedText
contains        "NS"
            send clearance to this page
            break conditions
        when pw is pwoc of this page and selectedText
contains        "OC"
            send clearance to this page
            break conditions

        when pw is pwor of this page and selectedText
contains        "OR"
            send clearance to this page
            break conditions

        when pw is pwph of this page and selectedText
contains        "PH"
            send clearance to this page
            break conditions

        when pw is pwss of this page and selectedText
contains        "SS"
            send clearance to this page
            break conditions

        when pw is pwsw of this page and selectedText
contains        "SW"
            send clearance to this page
            break conditions

        else
            set updateModifyList of this background to null
            request "Sorry, incorrect password"
            save changes to this book
    end conditions
    set sysCursor to 1
end
```

```
script of button ID 10 of page id 8 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- Script to exit Resume Book with warning displayed first


to handle buttonUp

    request "Are you sure you want to exit the Faculty and
Staff   Resume book" with "YES" or "NO"

    if it is "YES" then
        save changes to this book
        send exit
    end if
end



script of button ID 23 of page id 8 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- Script to go to the VIEW page

to handle buttonUp
    request "Are you sure you want to exit the Modify Page?"
        &crlf&crlf&\"You will need to use your PASSWORD to
    return to this page." with "YES" or "NO"

    if it is "YES" then
        go to page "view options"
    end if
end

script of button ID 56 of page id 8 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- script to allow a SUPER USER to change the department
password  -- to gain access to the MODIFY list.  Uses
confirmation to        -- ensure accurarcy

to handle buttonUp
    local pwChangerDept,pwChanger1,pwChanger2
    hide field "mod_inst"
    hide line "PW_line"

    set it to null
    ask "Please type in 2 letter identifier for dept.
    password you desire to change"

    if it is null
        break buttonUp
    end if
```

```
set pwChangerDept to it
set it to null

ask password "Please type in NEW password for"&&\
    pwChangerDept&&"dept."

if it is null
    break buttonUp
end if

set pwChanger1 to it
set it to null

ask password "Please type in NEW password AGAIN to
verify change of the"&&pwChangerDept&&"dept. password"

if it is null
    break buttonUp
end if
set pwChanger2 to it

if pwChanger1=pwChanger2 then
    conditions
        when pwChangerDept contains "all"
            set pwall of this page to pwchanger2
            request "The password for ALL has been
            changed"
            Break conditions

        when pwChangerDept contains "aa"
            set pwaa of this page to pwchanger2
            request "The password for AA dept. has been
            changed"
            Break conditions

        when pwChangerDept contains "as"
            set pwas of this page to pwchanger2
            request "The password for AS dept. has been
            changed"
            Break conditions

        when pwChangerDept contains "cc"
            set pwcc of this page to pwchanger2
            request "The password for CC dept. has been
            changed"
            Break conditions

        when pwChangerDept contains "cs"
            set pwcs of this page to pwchanger2
            request "The password for CS dept. has been
            changed"
```

```
    Break conditions

when pwChangerDept contains "ec"
    set pwec of this page to pwchanger2
    request "The password for EC dept. has been
    changed"
    Break conditions

when pwChangerDept contains "ew"
    set pwew of this page to pwchanger2
    request "The password for EW dept. has been
    changed"
    Break conditions

when pwChangerDept contains "ma"
    set pwma of this page to pwchanger2
    request "The password for MA dept. has been
    changed"
    Break conditions

    when pwChangerDept contains "me"
    set pwme of this page to pwchanger2
    request "The password for ME dept. has been
    changed"
    Break conditions

when pwChangerDept contains "mr"
    set pwmr of this page to pwchanger2
    request "The password for MR dept. has been
    changed"
    Break conditions

when pwChangerDept contains "ns"
    set pwns of this page to pwchanger2
    request "The password for NS dept. has been
    changed"
    Break conditions

when pwChangerDept contains "oc"
    set pwoc of this page to pwchanger2
    request "The password for OC dept. has been
    changed"
    Break conditions

when pwChangerDept contains "or"
    set pwor of this page to pwchanger2
    request "The password for OR dept. has been
    changed"
    Break conditions

when pwChangerDept contains "ph"
```

```
                set pwph of this page to pwchanger2
                request "The password for PH dept. has been
                changed"
                Break conditions
            when pwChangerDept contains "ss"
                set pwss of this page to pwchanger2
                request "The password for SS dept. has been
                changed"
                Break conditions
            when pwChangerDept contains "sw"
                set pwsw of this page to pwchanger2
                request "The password for SW dept. has been
                changed"
                Break conditions
            else
                request "Sorry, password for "&&\
                    pwChangerDept&&"did not change"
        end conditions
        else
            request "Sorry, password for "&&\
                pwChangerDept&&"did not change"
    end if
end buttonUp

to handle mouseEnter
    set text of field "mod_inst" to crlf&\
        "This button allows Super User to change Password
for          each Dept."
    show field "mod_inst"
    show line "PW_line"
end mouseEnter

to handle mouseLeave
    hide field "mod_inst" of page "modify"
    hide line "PW_line" of page "modify"
end mouseLeave

script of button ID 60 of page id 8 of Book
"C:\TOOLBOOK\BMTHESIS\INSTRU_J.TBK":
-- script to allow a SUPER USER to change the keywords on
the      -- VIEW page

to handle buttonUp
    set sysCursor to 4
    set sysLockScreen to true
    hide line "KW_line"
    hide field "mod_inst"
    go to page "view options"

    show button "done"
    show field "research_brkdwn"
```

```
    set fieldType of field "research_brkdwn" to noWrap
    set activated of field "research_brkdwn" to false
    set focus to field "research_brkdwn"

    show field "dept_brkdwn"
    set fieldType of field "dept_brkdwn" to noWrap
    set activated of field "dept_brkdwn" to false

    set sysLockScreen to false
    set sysCursor to 1
    request "You must click the DONE button when finished
    updating the DEPT. or RESEARCH keywords"
end

to handle mouseEnter
    set text of field "mod_inst" to crlf&\
        "This button allows Super User to change Keywords
for"        "the research area on the View Page."
    show field "mod_inst"
    show line "KW_line"
end mouseEnter

to handle mouseLeave
    hide field "mod_inst" of page "modify"
    hide line "KW_line" of page "modify"
end mouseLeave


script of Book "C:\TOOLBOOK\BMTHESIS\RESUME_J.TBK":
-- script to go to appropiate page for NEXT and PREVIOUS
buttons
-- also compacts the book and makes sure fields are modified
by
-- authorized personnel only

to handle enterBook
    restore system
    set syschangesDB to false
    system page_namer,old_name
    send sizeToPage
    set activated of recordField "name" of this page to true
    set activated of recordField "title" of this page to
true
    set activated of recordField "dept" of this page to true
    set activated of recordField "degree" of this page to
true
    set activated of recordField "research" of this page to
true
    set activated of recordField "bib" of this page to true
    hide menubar
    hide statusBox
```

```
end

to handle next
    increment ThePageImOn of this book

    if ThePageImOn of this book > itemCount( MyListOfPages
of  this book )
    set ThePageImOn of this book to 1
    end if

    get item ( ThePageImOn of this book ) of MyListOfPages
of  this book
    set advancer to it
    fxWipe right fast to gray
    fxWipe left fast to page advancer
end next

--this is code to step to previous
to handle previous
    decrement ThePageImOn of this book

    if ThePageImOn of this book = 0
        set ThePageImOn of this book to \
            itemCount( MyListOfPages of this book)
    end if

    get item ( ThePageImOn of this book ) of MyListOfPages
of  this book
    fxWipe left fast to gray
    fxWipe right fast to page it
end previous

to handle compactBook
    local oldName1
    set oldName1 to name of this book
    clear sysError
    save as "x.tbk",true
    save as oldName1,true
end compactBook

script of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\RESUME_J.TBK":
-- script to determine if the USER is making changes to the
     -- RESUME book or is just viewing it

to handle enterBackground
    set sysCursor to 4
    set sysLockScreen to true

    if det_mod_resume of this background is "add" or \
            det_mod_resume of this background is "modifier"
```

```
            show group "modify_buttons" of this background
            show field "instructions" of this background
            hide group "buttons" of this background

            set activated of recordField "name" of this page
            to false
            set activated of recordField "title" of this
page            to false
            set activated of recordField "dept" of this page
            to false
            set activated of recordField "degree" of this
page            to false
            set activated of recordField "research" of this
            page to false
            set activated of recordField "bib" of this page
to          false
            show menuBar
    else
            show group "buttons" of this background
            hide field "instructions" of this background
            hide group "modify_buttons" of this background
    end

    conditions
        when det_mod_resume of this background is "add"
            set text of field "instructions" of this
            background to "INSTRUCTIONS" &crlf&crlf& \
                "1 Double click or TAB to the box you desire
                to add text."&crlf&\
                "To Italicize the text, First highlight the
                text then"&&\
                "Use the TEXT Pulldown menu and select
                ITALIC."&crlf&crlf&\
                "2 Scan a Photo with a scanner and save it
as              a bitmap file."&&\
                "(the photo should be presized to 1.25 in. X
                2.00 in.)"&crlf&crlf&\
                "3 Import the photo by clicking Import Photo
                button and entering complete path
                name"&crlf&crlf&\
                "4 When finished click DONE"&crlf&crlf&\
                "5 If you want to exit WITHOUT saving
                additions click CANCEL"
                break

        when det_mod_resume of this background is "modifier"
            set text of field "instructions" of this
            background to \
                "        INSTRUCTIONS" & crlf&crlf&\
```

```
                "1 Double click or TAB to the box you desire
                to modify text."&&\
                "To Italicize the text, First highlight the
                text then"&&\
                "Use the TEXT Pulldown menu and select
                ITALIC."&crlf&crlf&\
                "2 Scan a Photo with a scanner and save it
as              a bitmap file."&&\
                "(the photo should be presized to 1.25 in. X
                2.00 in.)"&crlf&crlf&\
                "3 Import the photo by clicking Import Photo
                button"&&\
                "and entering complete path
name"&crlf&crlf&\
                "4 When finished click DONE"&crlf&crlf&\
                "5 If you want to exit WITHOUT saving
                additions click CANCEL"
    end conditions

    set sysCursor to 1
    set sysLockScreen to false
end

to handle leaveBackground
    conditions
        when det_mod_resume of this background is "modifier"
or      det_mod_resume of this background is "add"
            set det_mod_resume of this background to null
            save changes to this book
    end
end


to handle reset_det_mod_resume
    set det_mod_resume to null
    save changes to this book
end

script of recordField ID 11 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\RESUME_J.TBK":
to handle keyChar key
    get ansiToChar(key)

    if it is in "abcdefghijklmnopqrstuvwxyz.,  " then
        forward
    end if

end

script of recordField ID 14 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\RESUME_J.TBK":
```

```
to handle XbuttonDoubleClick
    get textline SelectedTextLines of text of recordField
    "research"
end

script of button ID 23 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\RESUME_J.TBK":
-- script to navigate USER to faculty's publications in the
PUBS   -- book

to handle buttonUp
    set syscursor to 4
    set sysLockscreen to true
    local finder
    set finder to name of this page
    save changes to this book

    go to page finder of book "pubs_j.tbk"

    set text of recordField "name" of this page\
         to (name of this page)
    set sysLockscreen to false
    set syscursor to 1
end
script of button ID 27 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\RESUME_J.TBK":
-- script to navigate USER to faculty's awards in the AWARDS
book
to handle buttonUp
    set syscursor to 4
    set sysLockscreen to true
    local finder
    set finder to name of this page
    save changes to this book

    go to page finder of book "awards_j.tbk"

    set text of recordField "name" of this page\
         to (name of this page)
    set sysLockscreen to false
    set syscursor to 1
end

script of button ID 25 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\RESUME_J.TBK":
-- script to print this page without background "photo"
showing to handle buttonUp
    start spooler
        hide field "photo" of this background
        print 1 pages
        show field "photo" of this background
```

```
    end spooler
end

script of button ID 26 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\RESUME_J.TBK":
-- script to exit RESUME book with confirmation first
to handle buttonUp
    request "Are you sure you want to exit the Faculty"&&\
     "and Staff Resume book" with "YES" or "NO"
        if it is "YES" then
            save changes to this book
            send exit
        end if
end buttonUp
script of button ID 24 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\RESUME_J.TBK":
-- script to navigate USER to next page

to handle buttonUp
    send next
end
script of button ID 28 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\RESUME_J.TBK":
-- script to navigate USER to next page
to handle buttonUp
    send previous
end buttonUp
script of button ID 29 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\RESUME_J.TBK":
-- script to navigate USER to VIEW page
to handle buttonUp
    set syscursor to 4
    set sysLockscreen to true
    hide field "list heading" of page "view options" of book
    "instru_j.tbk"
    hide recordfield "list" of page "view options" of book
    "instru_j.tbk"
    hide field "dept_brkdwn" of page "view options" of book
    "instru_j.tbk"
    hide field "research_brkdwn" of page "view options" of
book    "instru_j.tbk"
    set sysChangesDB to false
    set sysLockscreen to false
    fxZoom fast to page "view options" of book
"instru_j.tbk"
    set syscursor to 1
end

script of button ID 34 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\RESUME_J.TBK":
-- script to save changes for ADD and MODIFY a record
```

```
to handle buttonUp

    local page_namer,old_name,new_page_namer
    hide field "explain" of this background
    request "Are you finished with this page"\
        with "YES" or "NO"

    conditions
        when it is "yes" and det_mod_resume of this
background      is "add"
            set syscursor to 4
            set sysLockscreen to true

            set page_namer to text of recordField "name" of
            this page
            set name of this page to page_namer
            sort pages 1 to (pageCount of this book) \
                by ascending name text of recordfield "name"
            set det_mod_pubs of background "pubs" of book
            "pubs_j.tbk" to "add"
            send reset_det_mod_resume

            go to book "pubs_j.tbk"
            send last
            send newPage
            set name of this page to page_namer
            set text of recordField "name" of this page\
                 to page_namer

            set sysLockScreen to false
            set sysCursor to 1
            break conditions

        when it is "yes" and det_mod_resume of this
background      is "modifier"
            set page_namer to (name of this page)
            set new_page_namer to text of recordField "name"
            of this page

            set name of this page to new_page_namer
            save changes to this book

            set name of page page_namer of book "pubs_j.tbk"
            to new_page_namer
            save changes to book "pubs_j.tbk"

            set name of page page_namer of book
"awards_j.tbk"      to new_page_namer
            save changes to book "awards_j.tbk"
            sort pages 1 to (pageCount of this book) \
             by ascending name text of recordfield "name"
```

```
            send reset_det_mod_resume

            request "Select other pages you need to modify
            for" (name of this page) with "Pubs" or "Awards"
            or "None"

                if it is "Pubs" then
                     set syscursor to 4
                     set sysLockscreen to true

                     set det_mod_pubs of background "pubs"
of                   book "pubs_j.tbk" to "modifier"

                     go to page new_page_namer of book
                     "pubs_j.tbk"
                     set the text of recordField "name" of
                     this page to (name of this page)

                     set sysLockscreen to false
                     set syscursor to 1
                     break conditions
                end if

                if it is "Awards" then
                     set syscursor to 4
                     set sysLockscreen to true

                     set det_mod_awards of background
                     "awards" of book "awards_j.tbk" to
                     "modifier"
                     go to page new_page_namer of book
                     "awards_j.tbk"
                     set the text of recordField "name" of
                     this page to (name of this page)

                     set sysLockscreen to false
                     set syscursor to 1
                     break conditions
                end if
                if it is "None" then
                     set syscursor to 4
                     set sysLockscreen to true

                     go to page "modify" of book
                     "instru_j.tbk"
                     set sysLockscreen to false
                     set syscursor to 1
                     break conditions
                end if

        end conditions
```

```
end

to handle mouseEnter
    set text of field "explain" of this background to\
        crlf & "This button will save your changes "
        show field "explain" of this background
end mouseEnter

to handle mouseLeave
    hide field "explain" of background "resume" of book
    "resume_j.tbk"
end mouseLeave

script of button ID 38 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\RESUME_J.TBK":
--  script to return to MODIFY page of INSTRUCT book without
     --  saving changes

to handle buttonUp
    local old_name, page_namer
    set it to null
    hide field "explain" of this background

        conditions
            when det_mod_resume of this background is "add"
                request "Are you sure you want to DELETE
this                    record with "YES" or "NO"

            when det_mod_resume of this background is
            "modifier"
                request "Are you sure you DO NOT want to
save                modifications" with "YES" or "NO"
        end conditions

    conditions
        when it is "YES" and det_mod_resume of this
background      is "Add"
            set syscursor to 4
            set sysLockscreen to true
            select this page
            send clear
            sort pages 1 to (pageCount of this book) \
                by ascending name text of recordfield "name"
            send reset_det_mod_resume

            go to page "modify" of book "instru_j.tbk"

            set syscursor to 1
            set sysLockScreen to false
            break conditions
```

```
        when it is "YES" and det_mod_resume of this
background          is "modifier"
            set syscursor to 4
            set sysLockscreen to true
            set det_mod_resume of this background to null

            go to page "modify" of book "instru_j.tbk"

            set syscursor to 1
            set sysLockScreen to false
            break conditions
    end conditions
end

to handle mouseEnter
    set text of field "explain" of this background to\
        "This button will return you to the Instruction
page"&\         WITHOUT saving any of your modifications"
    show field "explain" of this background
end mouseEnter

to handle mouseLeave
    hide field "explain" of background "resume" of book
"resume_j.tbk"
end mouseLeave



script of button ID 59 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\RESUME_J.TBK":
-- script to delete photo of faculty member

to handle buttonUp
    hide field "explain" of this background
    request "Are you sure you want to delete this photo
of"&&\
        (name of this page) with "YES" or "NO"
    if it is "YES" then
        set sysCursor to 4
        select paintObject "thisPagesPhoto" of this page
        send Clear
        send compactBook
        set sysCursor to 1
    end if
end buttonUp


to handle mouseEnter
    set text of field "explain" of this background to\
        crlf&"This button will allow you to Delete the
current         Photo"
```

```
    show field "explain" of this background
end mouseEnter

to handle mouseLeave
    hide field "explain" of background "resume" of book
    "resume_j.tbk"
end mouseLeave
script of button ID 60 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\RESUME_J.TBK":
-- script to import photo of faculty member

to handle buttonUp
    local photo
    hide field "explain" of this background

    ask "What is complete file path AND name of the
photo"&&\
        "you wish to import including extension.  For
        example b:\Smith.bmp"
    set photo to it

    if photo is null then
        break
    else
        set sysLockScreen to true
        importGraphic photo
        set name of selection to "thisPagesPhoto"
        set bounds of selection to 0,0,1800,2800
        save changes to this book
        set sysCursor to 1
        set sysLockScreen to false
    end if
end buttonUp

to handle mouseEnter
    set text of field "explain" of this background to\
        "This button will allow you to Import a Photo"&\
            crlf&crlf&"You must scan a Photo and then save
it as a bimap"
    show field "explain" of this background
end mouseEnter

to handle mouseLeave
    hide field "explain" of background "resume" of book
"resume_j.tbk"
end mouseLeave


script of Book "C:\TOOLBOOK\BMTHESIS\PUBS_J.TBK":
-- script to ensure only authorized USER can modify this
book
```

```
-- and compact book

to handle enterbook
    restore system
    hide menubar
    hide statusBox
    send SizeToPage
    set activated of recordField "title_1" of this
background to   true
    set activated of recordField "title_2" of this
background to   true
    set activated of recordField "title_3" of this
background to   true
    set activated of recordField "title_4" of this
background to   true
    set activated of recordField "title_5" of this
background to   true
    set syschangesDB to false
end

to handle compactBook
    local oldName
    set oldName to name of this book
    clear sysError
    save as "y.tbk",true
    save as oldName,true
end compactBook

script of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\PUBS_J.TBK":
-- script to determine if the USER is making changes to the
PUBS   -- book or is just viewing it

to handle enterBackground
    if det_mod_pubs of this background is "add" or \
        det_mod_pubs of this background is "modifier"
        show menuBar

        show button "done" of this background
        show button "cancel" of this background
        hide group "buttons" of this background

        set activated of recordField "title_1" of this
        background to false
        set activated of recordField "title_2" of this
        background to false
        set activated of recordField "title_3" of this
        background to false
        set activated of recordField "title_4" of this
        background to false
```

```
        set activated of recordField "title_5" of this
        background to false
    else
        show group "buttons" of this background
        hide button "done" of this background
        hide button "cancel" of this background
    end if
end

to handle leavebackGround
    conditions
        when det_mod_pubs of this background is "add" or \
            det_mod_pubs of this background is "modifier"
                set det_mod_pubs of this background to null
                save changes to this book
    end
end

to handle reset_det_mod_pubs
    set det_mod_pubs to null
    save changes to this book
end

script of button ID 16 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\PUBS_J.TBK":
-- script to return to MODIFY page in RESUME book with
saving    -- changes for both ADD and MODIFY a record

to handle buttonUp

    hide field "explain" of this background
    local page_namer, new_name
    set page_namer to null
    set page_namer to name of this page

    request "Are you finished with this page"\
    with "YES" or "NO"

    conditions
        when it is "yes" and det_mod_pubs of this background
is      "add"
            set syscursor to 4
            set sysLockscreen to true
            set det_mod_awards of background "awards"\
                 of book "awards_j.tbk" to "add"
            send reset_det_mod_pubs

            go to book "awards_j.tbk"

            send last
            send newPage
```

```
            set name of this page to page_namer
            set text of recordField "name" of this page
            to(name of this page)

            set syscursor to 1
            set sysLockScreen to false
            break conditions

        when it is "yes" and det_mod_pubs of this background
is      "modifier"
            request "Select other pages you need to modify
            for"& name of this page) with "Awards" or "None"

            if it is "Awards" then
                set syscursor to 4
                set sysLockscreen to true
                set det_mod_awards of background "awards"\
                    of book "awards_j.tbk" to "modifier"
                send reset_det_mod_pubs

                go to page page_namer of book "awards_j.tbk"

                set text of recordField "name" of this page
                to(name of this page)
                set syscursor to 1
                set sysLockscreen to false
                break conditions
            end if

            if it is "None" then
                set syscursor to 4
                set sysLockscreen to true
                send reset_det_mod_pubs

                go to page "modify" of book "instru_j.tbk"

                set syscursor to 1
                set sysLockscreen to false
                break conditions
            end if

        end conditions
end


to handle mouseEnter
    clear text of field "explain" of this background
    set text of field "explain" of this background to\
    crlf & "This button will save your changes "
    show field "explain" of this background
end mouseEnter
```

```
to handle mouseLeave
    hide field "explain" of background "pubs" of book
    "pubs_j.tbk"
end mouseLeave


    script of button ID 18 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\PUBS_J.TBK":
-- script to return to MODIFY page in RESUME book without
saving   -- changes for both ADD and MODIFY a record

to handle buttonUp
    local page_namer
    set it to null
    set page_namer to name of this page
    hide field "explain" of this background

    conditions
        when det_mod_pubs of this background is "add"
            request "Are you sure you want to  DELETE this
        record All pages of"&& page_namer will be deleted"
                with "YES" or "NO"
            break conditions

        when det_mod_pubs of this background is "modifier"
            request "Are you sure you DO NOT want to
save"&&\
                "modifications of"&&page_namer with "YES" or
                "NO"
    end conditions


    conditions

        when it is "YES" and det_mod_pubs of this background
is      "add"
            set syscursor to 4
            set sysLockscreen to true

            select this page
            send clear
            send reset_det_mod_pubs

            go to page page_namer of book "resume_j.tbk"

            select this page
            send clear
            save changes to this book

            go to page "modify" of book "instru_j.tbk"
            set syscursor to 1
```

```
            set sysLockScreen to false
            break conditions

        when it is "YES" and det_mod_pubs of this background
is      "modifier"
            set syscursor to 4
            set sysLockscreen to true
            set det_mod_pubs of this background to null

            go to page "modify" of book "instru_j.tbk"

            set syscursor to 1
            set sysLockScreen to false
            break conditions

    end conditions
end


to handle mouseEnter
    clear text of field "explain" of this background
    set text of field "explain" of this background to\
    "This button will return you to the Instruction page"&&\
    "WITHOUT saving any of your modifications"
    show field "explain" of this background
end

to handle mouseLeave
    hide field "explain" of background "pubs" of book
    "pubs_j.tbk"
end


script of button ID 12 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\PUBS_J.TBK":
-- script to print hard copy of faculty's publications

to handle buttonUp
    start spooler
        print 1 pages
    end spooler
end

script of button ID 13 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\PUBS_J.TBK":
-- script to go to VIEW page
to handle buttonUp
    set sysCursor to 4
    fxZoom fast to page "view options" of book
"instru_j.tbk"
    set sysCursor to 1
```

```
end
script of button ID 14 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\PUBS_J.TBK":
-- script to go to faculty's RESUME page
to handle buttonUp
    set sysCursor to 4
    set sysLockScreen to true
    local finder
    set finder to name of this page
    go to page finder of book "resume_j.tbk"
    set sysCursor to 1
    set sysLockScreen to false
end

script of button ID 20 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\PUBS_J.TBK":
-- script to view faculty's awards

to handle buttonUp
    set sysCursor to 4
    set sysLockscreen to true
    local finder
    set finder to name of this page

    go to page finder of book "awards_j.tbk"

    set text of recordField "name" of this page to (name of
this    page)
    set sysCursor to 1
    set sysLockscreen to false
end

script of Book "C:\TOOLBOOK\BMTHESIS\AWARDS_J.TBK":
-- script to ensure only authorized USER can modify this
book
-- and compact book

to handle enterBook
    restore system
    hide menuBar
    hide statusBox
    send sizeToPage
    set activated of recordField "award_1" of this
background to   true
    set activated of recordField "award_2" of this
background to   true
    set activated of recordField "award_3" of this
background to   true
    set activated of recordField "award_4" of this
background to   true
```

```
    set activated of recordField "award_5" of this
background to   true
    set sysChangesDB to false
end

to handle leaveBook
    set det_mod_awards of background "awards" \
        of book "awards_j.tbk" to null
end

to handle compactBook
    local oldName
    set oldName to name of this book
    clear sysError
    save as "z.tbk",true
    save as oldName,true
end compactBook

script of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\AWARDS_J.TBK":
-- script to determine if the USER is making changes to the
     -- AWARDS book or is just viewing it


to handle enterBackground
--  system det_mod

    if det_mod_awards of this background is "add" or \
    det_mod_awards of this background is "modifier"
        show menubar
        show button "done" of this background
        show button "cancel" of this background
        hide group "buttons" of this background

        set activated of recordField "award_1" of this
        background to false
        set activated of recordField "award_2" of this
        background to false
        set activated of recordField "award_3" of this
        background to false
        set activated of recordField "award_4" of this
        background to false
        set activated of recordField "award_5" of this
        background to false
    else
        show group "buttons" of this background
        hide button "done" of this background
        hide button "cancel" of this background
    end if

end
```

```
to handle reset_det_mod_awards
    set det_mod_awards of this background to null
    save changes to this book
end

script of button ID 14 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\AWARDS_J.TBK":
-- script to return to MODIFY page in RESUME book with
saving      -- changes for both ADD and MODIFY a record

to handle buttonUp
    local old_name, page_namer

    set page_namer to name of this page
    hide field "explain" of this background

    request "Are you finished with this page"\
    with "YES" or "NO"

    conditions

        when it is "YES" and det_mod_awards of this
background      is "add"
            request "Would you like to ADD ANOTHER person"\
                with "YES" or "NO"

                if it is "YES"
                    set syscursor to 4
                    set sysLockscreen to true
                    set det_mod_resume of background
                    "resume" of book "resume_j.tbk" to
"add"
                    send reset_det_mod_awards

                    go to book "resume_j.tbk"
                    send last
                    send newPage

                    set syscursor to 1
                    set sysLockScreen to false
                    break conditions
                end if

                if it is "NO"
                    set syscursor to 4
                    set sysLockscreen to true
                    send reset_det_mod_awards

                    go to  page "modify" of book
                    "instru_j.tbk"
```

```
                    set syscursor to 1
                    set sysLockScreen to false
                    break conditions
                end if

        when it is "yes" and det_mod_awards of this
background      is "modifier" request "Select other pages
you need to         modify for"&&\
            (name of this page) with "Pubs" or "None"

                if it is "Pubs" then
                    set syscursor to 4
                    set sysLockscreen to true

                    set det_mod_pubs of background "pubs"\
                     of book "pubs_j.tbk" to "modifier"
                    send reset_det_mod_awards

                    go to page page_namer of book
                    "pubs_j.tbk"
                    set text of recordField "name"\
                    of this page to (name of this page)

                    set sysLockscreen to false
                    set syscursor to 1
                    break conditions
                end if

                if it is "None" then
                    set syscursor to 4
                    set sysLockscreen to true
                    send reset_det_mod_awards

                    go to page "modify" of book
                    "instru_j.tbk"

                    set sysLockscreen to false
                    set syscursor to 1
                    break conditions
                end if

        end conditions
end


to handle mouseEnter
    clear text of field "explain" of this background
    set text of field "explain" of this background to\
    crlf & "This button will save your changes "
    show field "explain" of this background
```

```
end mouseEnter

to handle mouseLeave
    hide field "explain" of background "awards" of book
"awards_j.tbk"
end mouseLeave


script of button ID 16 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\AWARDS_J.TBK":
-- script to return to MODIFY page in RESUME book without
saving -- changes for both ADD and MODIFY a record

to handle buttonUp
    local page_namer
    set it to null
    set page_namer to name of this page
    hide field "explain" of this background

    conditions
        when det_mod_awards of this background is "add"
            request "Are you sure you want to  DELETE this
            record ALL pages of"&& page_namer will be
deleted"
            with "YES" or "NO"

        when det_mod_awards of this background is "modifier"
            request "Are you sure you DO NOT want to save
            modifications" with "YES" or "NO"
    end conditions

    conditions

        when it is "YES" and det_mod_awards of this
background      is "Add"
            set syscursor to 4
            set sysLockscreen to true
            select this page
            send clear
            send reset_det_mod_awards

            go to page page_namer of book "pubs_j.tbk"
            set sysLockscreen to true
            select this page
            send clear
            save changes to this book

            go to page page_namer of book "resume_j.tbk"
            set sysLockscreen to true
            select this page
            send clear
```

```
            save changes to this book

            go to page "modify" of book "instru_j.tbk"
            set syscursor to 1
            set sysLockScreen to false
            break conditions

        when it is "YES" and det_mod_awards of this
background      is "modifier"
            set syscursor to 4
            set sysLockscreen to true
            set det_mod_awards of this background to null

            go to page "modify" of book "instru_j.tbk"

            set sysLockScreen to false
            set syscursor to 1
            break conditions

        end conditions
end

to handle mouseEnter
    clear text of field "explain" of this background
    set text of field "explain" of this background to\
    "This button will return you to the Instruction page"&&\
    "WITHOUT saving any of your modifications"
    show field "explain" of this background
end

to handle mouseLeave
    hide field "explain" of background "awards" of book
    "awards_j.tbk"
end


script of button ID 11 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\AWARDS_J.TBK":
-- script to provide hard copy of faculty's awards

to handle buttonUp
    start spooler
        print 1 pages
    end spooler
end

script of button ID 12 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\AWARDS_J.TBK":
-- script to go to VIEW page

to handle buttonUp
```

```
    set sysCursor to 4
    fxZoom fast to page "view options" of book
"instru_j.tbk"
    set sysCursor to 1
end

script of button ID 13 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\AWARDS_J.TBK":
-- script to return USER back to the faculty's RESUME page

to handle buttonUp
    set syscursor to 4
    set sysLockscreen to true
    local sender
    set sender to name of this page

    go to page sender of book "resume_j.tbk"

    set syscursor to 1
    set sysLockscreen to false
end


script of button ID 18 of background id 0 of Book
"C:\TOOLBOOK\BMTHESIS\AWARDS_J.TBK":
-- script to go to appropriate PUBS page for selected
faculty    -- member
to handle buttonUp
    set syscursor to 4
    set sysLockscreen to true
    local sender
    set sender to name of this page

    fxZoom fast to page sender of book "pubs_j.tbk"

    set text of recordField "name" of this page to (name of
this    page)
    set syscursor to 1
    set sysLockscreen to false
end
```

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